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Despite the enormous increase in books published, journals remain the major source of early dissemination of the results of scholarship and research. For that reason, the editors are indebted to their many colleagues across the country and abroad who assist in the assessment of manuscripts. Even for the five out of six manuscripts that are not accepted for publication, the work of our readers cannot be overestimated. It is a continuous service to the profession. Following is a list of the people who read at least one manuscript in the past year. We take this opportunity, at the end of volume 76, to thank them.

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BOOK REVIEWERS

"Park and Burgess": An Appreciation

Lee Braude
State University of New York, Fredonia

Though virtually fifty years separate contemporary sociology from the publication of *Introduction to the Science of Sociology* by Park and Burgess, this volume proposes an orientation to the discipline still worthy of consideration. Sociology is interactionist, spatial, concerned with both order and change, and is directed to the testing of propositions about human social life, as distinct from developing all-embracing explanatory schemes.

The forty-sixth anniversary of the second and last edition of *Introduction to the Science of Sociology* by Robert E. Park and Ernest W. Burgess (1924), and a reprinting under the editorship of Morris Janowitz of that second edition (1969), prompts a reappraisal of this monumental work from the perspective of a half-century.

As the Department of Sociology at the University of Chicago profoundly influenced the development of the discipline for over a generation, "Park and Burgess" (as the volume has familiarly come to be known) provided a theoretic focus for the influence of the department on the individual sociologists who emerged from it. The volume best typifies both what is now known as "Chicago sociology" (see Faris 1967) and what is (or could be) the program of contemporary sociology.

The thesis of Park and Burgess is a simple one, despite more than one thousand pages of text: "Social control is the central fact and the central problem of sociology" (1924, p. 42). The student of society must discover how dissimilar individuals are able to act in concert, for, ultimately, sociology is the science of collective behavior. Society, which is the congeries of habits, sentiments, folkways, and mores, is sustained through consensus and exists in and through the communication implicit in interaction. Consensus and, thus, concerted action arises out of the diminution of those forces that threaten the dissolution of the social order—competition and conflict—by forces that can restore the social equilibrium (this term is nowhere used in the text)—accommodation and assimilation. Behavior which is unplanned, which occurs outside of the normative constraints on conduct—crowds, mobs, panics, social movements—therefore represents a threat not merely to social stability but to the underlying functional integrity of the social structure and is, consequently, systemically problematic. At the same time, since such behavior has implications for the modification of structure, it may become a powerful mechanism both of control and of change; despite their potential for disorder, large aggregations of persons may be used to

effect that order which is essential for social continuity and social progress.

Implicit in such an approach is the assumption that the group is more than the sum of the persons who compose it; the group exists *sui generis* and the knowledge of behavior of individuals becomes irrelevant to sociological concerns. By specifying the process through which social control is exerted and the potentialities for concert achieved—competition, conflict, accommodation, assimilation—further constraint is placed upon the range of phenomena studied by the sociologist, since whatever phenomenon does not fit the process in some way is not worth studying. The essence of our humanity, in short, is our sociability, and we have no existence except as a socialized, corporate entity. Isolation is social death.

There is much in such a view which, particularly from the perspective of a half-century, might appear foreign to the *Geist* of contemporary sociological discourse. Yet the modern sociologist is still influenced by the thrust of Park and Burgess.

Park and Burgess did not develop a body of essentially new concepts. Rather, they provided a fresh and novel reconceptualization of existing material. The authors acknowledge their debt to W. I. Thomas, a senior colleague at Chicago, "for the point of view and the scheme of organization of materials which have largely been adopted in this book" (1924, p. vii), and an accompanying footnote especially cites his *Source Book for Social Origins* (1909) in this regard. Certainly, in terms of format "Park and Burgess" strongly resembles the *Source Book;* indeed, these two volumes set the standard for the emergence of the contemporary "reader," a collection of papers held together more or less by editorial comment and analysis. Thomas's concern with control of the social and physical environment as a fundamental human problem is manifest. His preoccupation with the challenge of critical junctures to the continuity and stability of the social process, and the response of groups thereto, is reflected in the extended treatment Park and Burgess give to the competition-assimilation continuum. Thomas's approach to attitudes and values, as well as his notion of the "four wishes" as fundamental psychological motives, receives the deferential treatment appropriate to his age and status within the discipline. So, too, are Cooley, Durkheim, and Simmel represented in the Park-Burgess formulary.[1] In short, Park and Burgess attempted to provide more than a commentary on a body of knowledge. They tried to present, through comprehensive introductions to and evaluations of the material included in the book (as well as extensive bibliographies—again, in the *Source Book* tradition), what they regarded as a "systematic treatise" of the field. It has yet to be duplicated.

[1] According to the "index of names" in the second (1924) edition, Thomas is cited thirty-seven times, while Simmel receives forty-three citations; Durkheim receives twenty-five, Cooley twenty-six, and Max Weber is mentioned but three times.

However, it is their ordering of the field that is particularly arresting. If a case must be made for sociology as a distinctive intellectual discipline, it is this: "[H]istory seeks to find out what actually happened and how it all came about. Sociology, on the other hand, seeks to explain on the basis of a study of other instances, the nature of the process involved.

"By nature we mean just that aspect and character of things in regard to which it is possible to make general statements and formulate laws" (1924, p. 11). Therefore, if sociology can make the claim to being unique, its uniqueness lies in the application of scientific technique to predict and control social behavior. This removes sociology from the realm of speculation or even the generation of grand conceptual schemes to elucidate social life but would rather make it, "in some fashion or other, an experimental science. It will become so as soon as it can state existing problems in such a way that the results in one case will demonstrate what can and should be done in another" (1924, p. 45). To turn "investigation" into "research" will require a set of tested propositions and some sort of theoretic orientation in which "facts" can be related and the implications of these relations drawn. Park and Burgess undertake to provide such an orientation, one that is thoroughly interactionist.

Borrowing primarily from Simmel (Small and Park were probably the first to bring Simmel's work to the attention of American sociology) and from Cooley, the authors argue, using the analogy of colliding billiard balls, that the very coming together of people in social intercourse changes them such that their individual activity becomes supraindividual and that they are changed thereby; the isolated *socius* is a contradiction in terms. A social relation is therefore a *reciprocal* relation in which people respond to one another—that is, interact—in terms of their mutual recognition of one another. Moreover, because this interaction exists in and through communication, it is basically symbolic interaction which concerns the sociologist. The symbolic repertoires available to an individual are not peculiarly or idiosyncratically his. They are cultural deposits (the Durkheimian "collective representation") which impose themselves upon the individual to the degree that his contacts give him access to them.

The orientation is also spatial. Social order, and therefore social survival, depends on the adequate and appropriate utilization of physical *and* social space. Intimacy and ease of contact—the extent to which people are willing to interact and the emotional content of the interaction which does thus ensue, a continuum formed (let us say) by Cooley's "primary group" as one pole and Simmel's "stranger" as the other—make for an orderly social life in a well-ordered space, as in rural towns and farms, or a disharmonious social life in a disordered space, as in the clash of ethnic communities within a large city. Competition and conflict—two of the four constituents of the interactive process—are disruptive (even though the authors label competi-

tion as "interaction without contact") precisely because the attainment of the prized items that initiated this process requires the transformation of space through invasion, exploitation, isolation. Accommodation and assimilation, on the other hand, are equilibrating because they lead to a normalization of spatial relationships through succession, toleration, compromise. Thus, the human condition is, in large measure, a problem of boundary maintenance and of insuring the integrity of the interactive system against the variety of social forces which at any time might threaten it. Wars, for example, decimate populations and lay waste the land. Treaties may end them, pacts and organizations—alliances, leagues, or confederations—attempt to mitigate or eliminate them. But within decades after a war's end, victor and vanquished may be indistinguishable: witness the consolidation of the Roman Empire under Augustus during the Pax Romana, or the coalescence of Greek culture under the Delphic amphictyony. Byzantium and Rome came together in A.D. 325, and the "Christianization" of Europe that resulted provided a fabric for the unification of diverse elements. A handshake ends a dispute, one ethnic group replaces another in an urban area and remakes it. Fear and hostility are replaced by a sense of security, however tenuous, and life goes on.

Consequently, such a perspective as is provided by Park and Burgess requires the sociologist to view social life as malleable and dynamic rather than a "cake of custom" from which there is no escape (to use Bagehot's phrase). Now this is not the dynamism envisioned by either a Ward or a Sumner; rather, it is an assumption one must make if he accepts the theses of (1) consensus and order as the desiderata of social life and (2) the utility of a processual model for the analysis of the achievement of order. The scope and fruitfulness of the Park-Burgess contribution becomes most apparent to those who accept these theses.

Whatever may be the view with which the sociologist confronts the world—conflict, exchange, an action frame of reference, or a functionalist orientation—the observer brings categories of analysis and interpretation to his data that do not necessarily derive from other bodies of data or from any data, but from the logical manipulation of variables which may bear no relation at all to the empirical world. So, too, the interactionist approach espoused by Park and Burgess is an interpretation of data which may equally obscure phenomena under investigation or eliminate relevant sociological concerns from investigation (as the competition-assimilation formulation indeed does). But the virtue of this approach as an analytical perspective is that its explanatory power derives from the sophistication with which the behavior is examined rather than from an internal logic of a particular model. Interaction (as behavior, not interpretation of behavior) induces change whose direction and extent cannot be predicted in advance, if only because its parameters cannot be clearly set forth. Orderly and mean-

ingful interaction will, at any moment, carry the seeds of its own destruction since it is creative, emergent. However long enduring any interaction may be, it is inherently unstable because of this evanescence. Hence, any explanation of behavior which the sociologist proposes must account for change both of state and of intensity. Thus, crowds may be worthy of study in themselves but, because they develop beyond the normative pale, they represent vehicles of change both directly—the active crowd bent on the destruction of a person or thing—and indirectly through the crowd that, over time, becomes the social movement which, in its turn, is transformed into incipient social structure. Therefore, as he investigates the forms of interaction, the sociologist is concerned with both interpersonal dynamics and the transformation of society.

Because social behavior is, at root, symbolic behavior, the concepts which the sociologist uses to explain this behavior must themselves be at once generic and precise. They must be capable of attending both to the range of behavior implicit in differential response to symbolic structures and to the interindividual patterning of such response—that is, the sharing of meaning—which makes social behavior possible, consistent, and generalizable. Park and Burgess recognized that the "road to . . . empirical validation does not lie in the manipulation of the method of inquiry; it lies in the examination of the empirical social world" (Blumer 1969, p. 34). The interactionist viewpoint they suggested fifty years ago permits us to view that world with a freshness and a vitality not often encountered in the plethora of models currently employed by sociologists.

Therefore (and, in some sense, to come full circle), the orientation is, like the book which contains it, research motivated. "The first thing that students in sociology need to learn is to observe and record their own observations; to read, and then to select and record the materials which are the fruits of their readings. . . . The whole organization of this volume may be taken as an illustration of a method, at once tentative and experimental, for the collection, classification and interpretation of materials, and should be used by students from the very outset in all their reading and study.

"Social questions have been endlessly discussed, and it is important that they should be. What the student needs to learn, however, is how to get facts rather than formulate opinions. [Until this occurs] we must not expect very great progress in sociological science" (Park and Burgess 1924, pp. v–vi). To examine data in terms of a notably sociological conceptual scheme—this is the only way by which sociology can move from "investigation" to "research." The impact on American sociology of this work was profound and persistent. It was threefold.

If introductory textbooks correctly mirror the thought in a discipline, it is clear, first, that the appearance of "Park and Burgess" served to standardize this thought by providing a precisely defined and delimited body of

concepts, buttressed by myriad illustrations, which would serve as a core for a systematic analysis of human social life and the specification of an exhaustive program of research based on this analysis. By rigorously bounding the field, yet combining a catholicity of sources which sociologists of diverse intellectual persuasions could use, the authors sought to free their work—and, indeed, the field—from the variability in content and the doctrinaire quality of texts then available (see Blackmar and Gillin 1905; Bogardus 1917; Bushee 1923; Carver 1905; Dealey and Ward 1916; Hart 1924; Hayes 1915; Ross 1901, 1922; Ward 1911). The standardization of such concepts as interaction, communication, social process, competition, and collective behavior dissolved differences in orientations of individual sociologists by "making it much more difficult for sociological schools to develop, because it was now required that sociologists take account of these concepts even where they had theoretical objections to them" (Valien and Valien 1957, p. 81). The texts which followed upon the publication of the *Introduction* utilized to some degree the approach provided there, and one could discern in them the transition from a perception of sociology as an *omnium gatherum* for the scholarly afflatus of older social sciences to the development of a distinctive intellectual discipline with its own conceptual arsenal, research program, and techniques of investigation (see Bell and Sirjamaki 1965; Bernard 1942; Boettiger 1938; Dawson and Gettys 1935; Hankins 1937; LaPiere 1946; Lumley 1935; Lundberg 1939; MacIver 1937; Martindale 1966; Reinhardt and Davies 1932; Reuter and Hart 1933; Vernon 1965; Young 1939; Znaniecki 1936).

It was the call of the authors for a massive research effort that provides a second measure of the influence of the *Introduction*. Certainly, American sociology was not devoid of research prior to 1921, when "Park and Burgess" first appeared. Thomas had studied the Polish peasant in Europe (with Znaniecki) and in Chicago; Burgess had studied Russian immigrants. Faculty of the Chicago School of Civics and Philanthropy (later the School of Social Service Administration of the University of Chicago) had investigated the ethnic enclaves surrounding Hull-House. But many of these studies were either muckraking or melioristic in emphasis (Park in fact described himself as "one of the first and humbler muckrakers" [Odum 1951, p. 132]), or lacking in theoretical maturity.

Long before Park arrived at Chicago in 1913, he had reached the conclusion that, for sociology to move from social philosophy to social science, greater conceptual and methodological rigor would be required. "One thing that I discovered in the course of my studies was that there was no adequate and no precise language in which to describe the things I wanted to study.

"It was these researches that revealed to me that we had in sociology much theory but no working concepts. . . . I did not see how we could have

anything like scientific research unless we had a system of classification and a frame of reference into which we could sort out and describe in general terms the things we were attempting to investigate. Park and Burgess' *Introduction* was a first rough sketch of such a classification and frame of reference" (Odum 1951, p. 132). Park and Burgess coupled this drive toward formalization of the field with a corresponding emphasis on more intensive application of a quantitative imagery to the collection and analysis of data, and in so doing made rigorous sociological research respectable. The fecundity of "Chicago sociology" rests, therefore, not only on the theoretical stance of the *Introduction* but on the very legitimation of substantive research provided by the work.[2]

And consider the range of that research! Anderson's *The Hobo* (1923); Thrasher's *The Gang* (1927); Wirth's *The Ghetto* (1928); Zorbaugh's *The Gold Coast and the Slum* (1929); Shaw's *The Jack-Roller* (1930); studies of occupations begun by Hughes (1928) and continued by his students, notably Hall (1949) and H. S. Becker (1952); Hughes's *French Canada in Transition* (1943); Whyte's *Street Corner Society* (1943); Ogburn and Duncan's "City Size as a Sociological Variable" (1964); Lindesmith's investigation of opiate addiction (1947) and H. S. Becker's of marihuana use (1953); and the massive research on the American soldier conducted by Stouffer and his associates (1949–50).

But the most profound influence of this work, and one by which it transcends the period of its publication, lies in the immediacy of its challenge to newer generations of sociologists. The proliferation of sociological knowledge in recent years has made it increasingly necessary to order and codify this knowledge. The development of a conceptual scheme capable of comprehending this body of information has, consequently, become an undertaking of the highest priority. It is an effort to which recent and contemporary sociologists as different in their perspectives as, for example, Mills (1959), Parsons (1951), and Homans (1958) have addressed themselves.

However disparate such views of social reality may appear to be, they share a common concern with clarifying the process of interaction. And it is precisely in this unity that the seminal quality of the *Introduction* is revealed. While one may decry the Park-Burgess conceptual scheme, one must marvel at the audacity of the volume: the first systematic presentation to the American sociological audience of a point of view about social life in terms which could be used to quantitatively understand the physical world.

[2] It must be added, however, that the direction taken by much of the research conducted by sociologists working in this tradition derives as well from the Park, Burgess, and McKenzie volume on the city (1925), particularly the first two chapters of that work, "The City: Suggestions for the Investigation of Human Behavior in the Urban Environment" (Park) and "The Growth of the City" (Burgess), which contains the first published statement of the zonal hypothesis of urban growth.

Though forms and elements may differ, the process common to both is interaction. It is the task of the sociologist to make sense of the particular forms of social interaction (what Simmel called the "forms of sociation"), to see recurrent and consistent patterns in these forms, and to predict and generalize on the basis of observed regularities in occurrence of these forms. While the particular techniques of data collection might be peculiar to sociology, the logic of inference and proof would be common to all scientific disciplines. That Park and Burgess present a particular rubric for the analysis of interaction is of far less importance than their crucial observation that the emergence of sociology as a coherent discipline requires the sociologist to turn from speculation to a rigorous examination of the empirical social world, to develop *some* frame of reference congruent not only with a body of verified knowledge but with that reality experienced by the person, be he sociologist or layman.

"Park and Burgess" therefore challenges the contemporary sociologist to operate with a model of social life consistent with that life. He is called on to gather data not merely to generate knowledge but to test the validity of his model. And he is urged to assess his research not only in terms of its substantive contribution to the fund of knowledge but also with respect to its relevance for the world "out there" beyond the sociologist's cubicle—the degree to which "social principles" are applied to "social practice" (1924, p. 57).

However, like any work of the mind, *Introduction to the Science of Sociology* is a product of its time. In its perception of order as the proper state of affairs among men and groups, and in its emphasis on the operation of "natural" social forces as mechanisms of change, the volume fell heir to the prevailing laissez faire ethic permeating social science of that period (and, one might add, which still exists, albeit in attenuated form [see Myrdal 1944, pp. 1035–70; Mills 1942]). Yet, paradoxically, in its concern with amelioration of endemic social problems and with the diminution of ill will, and group difference, "Park and Burgess" continued the reformist bent of much of American sociology, which was directed precisely at the heart of that laissez faire ethic: callous disdain by the white, Anglo-Saxon, Protestant majority in the United States for the plight of groups who were, regretfully, neither Anglo-Saxon, nor Protestant, nor necessarily white (see House 1936, pp. 219–27; Baltzell 1964, pp. 46–142). In its avoidance of consideration of what Janowitz has called macrosociology (Park and Burgess 1969, pp. viii–ix) and the impact of the institutional order on interaction, the work was perhaps less than prescient with respect to the development of the field during the ensuing years. Nevertheless, sociology as a discipline could not have developed its particular vigor without this volume.

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Defensive Structuring and Environmental Stress[1]

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This essay explores a kind of adaptation, referred to as *defensive structuring*, that recurs with great regularity among groups that perceive themselves as exposed to environmental stress of long duration with which they cannot cope directly and aggressively. Adaptive elements include: authoritarian control over members, exercised by a small specially knowledgeable elite; a high rate of endogamy; cultivation of cultural identity symbols; and early socialization for impulse control. A defensive adaptation emerges from specifiable kinds both of prior structural characteristics and environmental changes in interaction. Examples are provided from cases examined in some depth. The response syndrome is discussed in relation to social and revitalization movements and closed corporate communities.

In this essay I propose to explore the essential features of a class of societies whose members attempt to establish and preserve a cultural identity in the face of what they feel are external threats to that identity. This phenomenon, to be referred to as defensive adaptation, can be viewed as one of several possible strategies for coping with stress. Members of defensive societies see the surrounding environment as hostile and the people in it as prepared to engage in destructive or depriving actions. Such groups have been difficult to penetrate for the disinterested investigator. Willing informants are few and are often subject to reprisal and disciplinary action; individuals who do not readily submit to authority figures stand to lose their membership in the group and to be physically rejected (namely Freilich 1962 and Hostetler 1964).

The main thrust of the following analysis is concerned with specifying the structure of defensive adaptation, its elements, and their relationships. This is an inductive task, the aim of which is to generate some causal explanations, especially to suggest what dimensions of perceived stress in relation to prior conditions of the group are likely to have a defensive outcome with some predictable regularity.

Investigations at Taos and Picuris Indian pueblos of eastern New Mexico first provided insights into the nature of defensive structuring. Further confirmation was provided from other studies of ethnic enclaves like the Hutterites, Amish, and Mormons; Jews who lived, prior to World War II,

[1] I am indebted to several of my colleagues and students who have commented upon earlier drafts of this paper. In particular I wish to express my thanks to David K. Jordan, Allan Johnson, Sanford Dornbush, and Arnold Strickon, from whose careful reading I have especially benefited. They are, of course, in no way responsible for its present form.

in compact villages called "shtetls" in eastern Europe (Zborowski and Herzog 1962); certain villages of Japan (Saito 1955); the Black Muslims (Lincoln 1961; Essien-Udom 1962); the Egyptian Copts (Wakin 1963); and village communities in the Alpine region of Europe (Burns 1963).

THE STRUCTURE OF DEFENSIVENESS

Cultural Integration

A central characteristic of defensive adaptation is the presence of a few key values which lend a keen sense of cultural integrity to the group. As commonly used, the term "cultural integration" refers essentially to the degree of interrelatedness, interdependence, or linkage to be found among the elements of a culture.[2] In turn, these linkages seem to reflect the operation of values or underlying principles common to more than one activity. A tightly integrated system is characterized by a strong centralization of values, that is, the tendency for broad sectors of custom to be related to a few key values.[3] Under these circumstances a person who might otherwise favor a given innovation will often discard the idea because he knows that substitution for one custom that he no longer values will mean the loss of others which he does value.[4]

A central value of all defensive groups appears to be subordination of the individual to the group. This is reflected in the generalization of cooperative effort in many in-group activities, the settlement of disputes by knowledgeable authorities, and the emphasis upon steady goal-oriented work habits.

Symbols and Identity

However varied the content of these values, they are reflected in supporting symbols. By means of these symbols a given aggregate of individuals develops an intensive sense of group identification. They state, in effect: "I am a Taos," "I am a shtetl member," and so forth, and this identifica-

[2] Or, as Ward Goodenough (1963, p. 68) has expressed it, the "limiting effect of each custom on the forms that other customs can conveniently take." Hence, where there is a high degree of integration in this sense we would expect a continual scrutiny of inconsistencies and ambiguities among beliefs.

[3] It is perhaps not accidental that the holistic approach to the concept of culture, an emphasis upon the functional interdependence of custom and belief, came early to dominate the thinking of anthropologists as a consequence, until recently, of their almost exclusive concern with the study of small-scale, relatively isolated, and discrete primitive societies. The communication network of defensive societies tends to approximate that of primitive isolated groups, and is indeed intended to foster isolation in the complex environments of the modern world.

[4] Not all so-called tribal and peasant societies exhibit this reluctance to accept innovations and proliferate alternatives, a view once commonly assumed by Western advocates of technological innovation who encountered so many negative experiences. Quite the contrary, as many postwar studies vividly reveal. This characterization, an artifact of

tion is supported by a few badges which members are emotionally reluctant to discard. The latter commonly include language and special colloquialisms (ordinary discourse among members is carried on in one language, another being employed in conversations with nonmembers). They may also include special customs of defensive, punctilious observance of particular rituals, and, when encountered in the form of natural communities, a very high rate of local endogamy.[5] Acceptance of and conformity to behavior consonant with these symbols is not open to discussion; alternative means of coping with social situations are either prevented from coming to the attention of the group, or they are carefully screened when individuals learn about them and propose them for adoption.

Insofar as supporting symbols assume the significance we have imputed to them, one would expect as a corollary of this that *identity problems* that currently preoccupy so many students of personality development in our own society would be largely absent in groups with tightly integrated cultures. If such identity is originally weak, ambiguous, largely absent, or in a formative state, it will, under stress and as a group become increasingly defensive, be invented and buttressed with available symbols from the past or present. In the process of emerging from the multimillion aggregate of American Negroes, the Black Muslims very deliberately developed a social identity by means of certain symbols to which they assigned special meanings. To gain and retain membership, for example, Black Muslims are expected to assume a Mohammedan name. They are exhorted to dress in a manner that will not betray lower-class origins and to eat certain foods and eschew others. They, of course, attend distinctive temples and learn a ritual language associated with a special version of the Koran (Essien-Udom 1962, p. 199).

Communication and Interaction Patterns

Members of defensive societies tend to interact with nonmembers in conventional ways. When interrogated on issues they consider sensitive—usually many and pervasive—members will respond with ready-made answers which are meant to deceive. Potential innovations, as we have seen, are carefully screened by legitimate authorities. A special humor contains allusions deliberately confined to insiders. In general, social inter-

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oversimplified classification of human groups by many anthropologists, often masked their variability in this respect. The error was compounded by failing to consider as part of social theory the continuous interaction of group and environment (see, for example, Firth [1951]).

[5] The high degree of endogamy among orthodox Pueblo Indians, Jews, and Mormons is well documented. Among Black Muslims marriage with a white is emphatically prohibited. Less well known is the fact that, in comparison with blacks as a whole, marriage is strongly preferential within the group. When a member does marry a non-Muslim great pressure is put on non-Muslim spouses to join the Nation.

course with nonmembers is limited. Where enduring relations do occur (between friends or godparents, between a patron or merchant and client or customer) they tend to be specific and established only with individuals known to be discreet and with whom there exists some implicit agreement to avoid all sensitive matters in conversation.[6]

The net effect of such controlled communication between members and nonmembers is to make the latter often want membership, to be kept at a distance, and to lead the former to reinforce emotionally the beliefs and behaviors which symbolize continuity of the group. To maintain this kind of solidarity requires continuous surveillance and some culturally available techniques that facilitate rapid communication and mobilization of public opinion. Most commonly these conditions are met by a dense settlement pattern in which dwellings are located very close to, sometimes literally on top of, one another (as in pueblo societies and ghetto communities). Some numerically large and broadly dispersed groups that exhibit defensive structuring, like the Egyptian Copts, the Mormons, or the Black Muslims, have solved this problem by combining strong centralized authoritarian control at the top, with the allocation of decision-making power in most daily affairs to highly autonomous neighborhood temples, church schools, and missions (Wakin 1963, pp. 141, 147 ff.; Lincoln 1961, pp. 15 ff., 199).[7] In the case of the latter, modern transport and communication techniques make possible continual links of the local groups to national leadership. The central feature of any Black Muslim meeting is the sermon (or, more precisely, the exhortation). There is a great deal of exchange preaching done between temples, and Elijah Muhammad himself travels all over the country to speak at gatherings. The establishment of a new tradition and the development of strong commitment to it owe their success in large measure to mutually reinforcing communication networks: the acquaintance and interchange of ministers from diverse regions and a single training center for schoolteachers.[8]

[6] To the investigator this wall of seclusion is both frustrating and challenging. The gates seldom open wide, and then for short intervals, always attended by vigilant gatekeepers—to use Kurt Lewin's graphic simile. This is why some of the best ethnographies are the products of members or former members who have become behavioral scientists and retain an entrée into the group.

[7] For many years the Copts had a strong central political organization. Its influence over the past few years had progressively weakened as they identified their own welfare in Egyptian colonial days with dominant European Christians. With the virtual elimination of other non-Moslem minority groups, they once more lived in a world in which they perceived the threat of being absorbed into the general population and of economic and social deprivation. It is interesting to note unmistakable evidence of increased Coptic nationalism with the increasing belligerence of the Moslem Brotherhood and Egyptian nationalism.

[8] Other dispersed defensive societies, like Mormons and shtetl Jews, similarly evolved mechanisms for frequent communication of active members both within and between communities.

Behavioral controls and training for self-restraint.—Defensive groups reveal few and carefully controlled avenues for self-expression appropriate to the range of usually encountered life situations. Rules of conduct tend to be very explicit, so that the individual must exercise great restraint over his own behavior which, in turn, is closely supervised by an authoritarian elite. The controls, therefore, are twofold, consisting in (1) the nurturance of self-discipline in the individual, beginning very early (usually by the end of the second year), and (2) the allocation of authority or power at the broadest level to a small number of designated persons. The legitimation of political control is circular: it is derived from imputed wisdom in the interpretation of cultural values that are, in turn, often elevated to sacred status, thus conferring additional authority upon the actor in this role.

A prominent manifestation of control in defensive groups is, in terms of one rather widely held view, training for the maintenance of a high level of anxiety. As Hallowell puts it (1945, pp. 194–95), we find "a conscious strict control or even rejection of available anxiety reducing patterns and concomitant elaboration of in-group symbols of identification. . . . Certain anxieties may be inculcated in individuals (as part of the socialization process) in order to motivate them in the performance of patterns of behavior that are socially approved" (also Siegel 1955). Because it is felt to weaken the viability of many traditional modes of adaptation, the acculturation process, it is asserted in these same contexts, generates high anxiety states almost uniformly. If survival—cultural if not physical—is felt to be at stake, it requires, among other things, the cultivation of discipline among individuals of groups so affected (Horton 1943; Lemert 1954, p. 305). Continuous exercise of self-discipline, in turn, reduces greatly the available outlets for releasing accumulated tensions.

Sometimes control is evidenced in very little heavy drinking (not infrequently all drinking is forbidden or is prescribed temperately for ritual occasions only); an ideology against and constraining rules over the use of alcoholic beverages, and the incurring of strong disapproval and swift application of sanctions against offending individuals (Snyder 1958; Lincoln 1961). This is predictable since, physiologically, alcohol through its depressing function allows a relaxation of anxiety. Therefore, despite any other functions that institutionalized heavy drinking may have—such as the provision of a certain structure, social interaction, and cohesiveness in otherwise atomistic or anomic societies—it involves social costs and impairs, at least temporarily, the performance of many important duties (Field 1962, pp. 48–74; Graves 1967; Lemert 1962; Simmons 1960). In defensive groups even periodic release of this kind is felt to be intolerably dangerous.[9]

[9] In several recent studies of drinking behavior the asserted universality of increasing anxiety in the acculturative process has come under attack. Some kinds of heavy drink-

Just as they discourage or forbid behavior that reduces their capacity for swift mobilization of effort in coping with threat, defensive groups also emphasize solidarity, harmony, and interdependency in various ways: by seductively warm mother-child relationships, by communal ceremonials, and by collective expressive behavior. They also sanction various kinds of indirect outlets for tension release, especially through humor and moral judgments directed outward and malevolent accusations and mythology directed inward, that is toward other members of the in-group (Snyder 1958; Eggan 1950; Siegel 1949; Vogt and Albert 1966; Zborowski and Herzog 1962).

There appears to be, thus, a conscious attempt to maintain comparatively intensive anxiety states within the collectivity by requiring constant exercise of control over behavior potentially destructive to the group. Real and perceived threats to continued existence require continual emphasis upon and renewal of social cohesion; latent conflict or cleavage demands both internal and external controls. I would propose that brawling, overt domestic quarreling, and excesses in aggressive behaviors that disrupt on-going activities or call attention to dissension within the group are suppressed early (Williams 1947, p. 58). Although the evidence at present is meager, I would also hypothesize that suicide rates are low and that those suicides that do occur are of the kind that Durkheim spoke of as "suicide egoistes," that is, self-destruction by the individual who suffers an intolerable degree of alienation from his fellowmen (Durkheim 1897, chaps. 2 and 3; also Gibbs and Martin 1958). It is instructive to note in this regard that the few studies that seek a possible relation between chronic drinking and suicide (thought of, attempted, and completed) reveal a very significant association, and that both kinds of behavior are linked to social disintegration (Batchelor 1954; Palola, Dorpat, and Larson 1962; Levy 1965, p. 312).[10]

The individual gains, by such adaptive behavior, a high degree of security (in the form of continual support and approval from others and his confident knowledge of norms). He loses, on the other hand, by the comparatively great effort he must make in self-discipline as well as by the submission he must always display to authoritative decision makers.

Among pueblo Indians, the early training for impulse control, and

ing—drinking bouts, for example—the observers argue, might equally well engender a feeling of greater mastery over one's environment with corresponding tension release (Lemert 1954, 1956; Field 1962). Undoubtedly drinking behavior has both of these, and perhaps other, outcomes. In any event, whatever gains it may have for the individual or the group, they are judged to be far outweighed by its costs.

[10] Levy also makes the relevant observation that suicide rates in disintegrating pueblos are considerably above the national average, while the rates in pueblos that have made a successful reactive adaptation (and therefore appear to be traditional) are far below the national average (p. 313).

particularly of direct forms of aggression, is almost proverbial (Aberle 1951; Brandt 1954; Vogt and Albert 1966). It is interesting to note the same emphasis among Black Muslims (Lincoln 1961; Essién-Udom 1962), in view of a popular image by nonmembers that portrays them as advocates of violence. In the Muslim ideology, the black man is of vastly different metal from the white man and therefore must live in a way that is appropriate to that superiority, throwing off the vices taught his people by the malicious white man: tobacco, alcohol, gambling, gluttony, jealousy, father-absent families, several foods associated with the diet of the southern Negro, and the like. In other words, he must cast aside the entire stereotype of the "so-called Negro" and lead a new life of strict morality and devotion to his people and to the institutions of the Nation of Islam. To remain a member in good standing, he must conform essentially to a puritanical moral code.

The Temples of Islam carry out recruiting programs in the black slums of a large number of American cities, but they try to be selective in retaining only those who are likely to respond positively to the rigid retraining process. The initial step seems to be the isolation of the individual from his former identity and his identification with a new role. Isolation from white men is particularly imperative in view of their corrupting influence. Ties with members of the non-Muslim Negro community obviously cannot be cut in all cases, nor is it always desirable that they should be. However, one's family and friends must recognize the change, or they too are liable to be cast aside, with however much regret. Training for submission to authority is continuous, and takes place in many domains of behavior simultaneously. Resocialization takes place over a long period of time, in the form of lessons. The aim is a transformation so sweeping that it affects every part of one's life and of his self-conception, reinforced in every conceivable way.

Elites and centralization of authority.—It would be difficult to imagine this pattern of shared understandings persisting without the regular provision of strong centralized public authorities. Training individuals so that they will exert a considerable measure of control over their own behavior is characteristic of all defensive societies, but it does not always work. When cultural survival is thought to be at stake, the matter of regulation cannot be left exclusively to self-control. It is buttressed formally by a relatively small number of authoritarian power holders. What is more, the legitimation of centralized authority stems from the urgent and apprehensive need for solutions to daily problems; the resource that confers power upon these offices is special knowledge. In most cases, therefore, the men who make decisions act in a sacred or quasi-sacred capacity. In some groups they may inherit their offices, but in all cases they must constantly validate their right to exercise the functions associated with them.

Thus the Catholic priests of Quebec villages and Coptic priests of Egypt, respectively, control ritual performances of the church and church-related education which, in each case, is primarily a manifestation of group autonomy (Wakin 1963; Riddle 1916, pp. 94 ff.; Hughes 1962, p. 9). In the case of Hutterites or Mormons, clergy are elected from among all male members in good standing. The priesthood or its equivalent is therefore very broad based. The highest authority, however, is vested in a few individuals whose qualifications involve the ability to interpret the basic and traditional experiences and sacred texts of the group into living doctrine. The Hutterites sanctify their own history, using it as a sacred record for the interpretation of present problems and the presentation of appropriate solutions within the Hutterite tradition (Deets 1939, p. 17). The Mormons act similarly in the *Doctrine and Covenants*, which consists of instructions to the early church and the establishment of precedents for church administration. Throughout the period of his leadership of the movement, Joseph Smith continued to receive divine guidance in times of difficulty, and the instructions given him at those times are regarded as valid for present difficulties as well. Mormon doctrine indeed awards the president of the church the power to receive additional revelation in order to supplement the recorded guidance of the past (O'Dea 1957, pp. 49, 130, 143; Caldwell 1954, p. 234).[11]

We do find defensive societies in which the ultimate source of power is apparently not derived from special religious knowledge. A Japanese sociologist (Saito 1955), for example, describes a Japanese fishing hamlet in northern Honshu, once very isolated but increasingly affected by a dynamic urban center, that aggressively reinforces its identity in a classically defensive fashion.

Traditionally, strong patriarchal control had been exerted by family heads through a village council consisting of older males, in conformance with Confucian values that defined desirable properties of family life. Today the custodians of this tradition suppress even more stringently any relaxation by the young of the etiquette that symbolizes these authoritarian relations: the use of respect language, seating customs at meals and during visits, the subservience of man's wife to his mother, and the stern emphasis on hard work imposed upon the young.

Elsewhere, Burns (1963) describes in some detail village communities in central Europe that for hundreds of years had perceived threats to their own identities from a variety of sources. This was virtually the only region in northern Europe that successfully maintained its independence against successive thrusts at domination by others—feudal lords, monarchies,

[11] Both the Hutterites and Mormons initiate virtually all adolescent males into the church's esoteric matters and responsibilities. From late adolescence on they constitute a reservoir of potential members of the priesthood.

and nation-states. Today each of the highly compact villages stands almost like an island apart, supported in this respect in various symbolic ways such as dress, dialect, ritual, and the like. Most village affairs and vital resources (namely, the alpage grazing lands) are managed independently. There is a larger political entity that links several such communities which lie in topographically related valleys: the canton. These alliances, that may also embrace cantons in the same way to form a federal republic, are very loose, and employ many checks and balances to safeguard punctiliously local community rights. We can summarize this situation by saying that village communities defend themselves (maintain their corporate identity vis-à-vis each other) in a network of partial interdependency. We are informed that the exercise of authority is also validated by secular rather than by sacred knowledge: of supervision of collective milk-cattle herds and maintenance of the intricate irrigation system. The system is strongly coercive, designed to preserve village goals.[12]

A significant attribute of many defensive groups, especially of those that form communities, is the implementing role of women as it relates to conservatism in the politically dominant male. Women learn that certain behaviors, things, or places associated with group identity are important to defend. But they are not privy to the symbolic content of these behaviors, things, or places: the body of knowledge that gives meaning to them. Women in the Jewish shtetl, for example, knew the importance of special learning, logic, and disputation about biblical commentaries in which only males are instructed. In other defensive groups women acquire the same attitude toward and experience the same exclusion from some comparable body of symbolic knowledge.

Power is conferred on a relatively small number of men who arrogate privileged learning to themselves. By virtue of this wisdom, their influence is further projected onto all kinds of practical matters of everyday life, on which they advise and adjudicate in the name of group ("national") security. The deliberate cultivation of ignorance among women involves minimal overt expression of internal strain over the distribution of scarce power, as long as the group closes ranks around the issue of survival (Moore and Tumin 1949, p. 790). Under these conditions it is predictable that persons who attach great importance to something of which they are

[12] Burns (1963, p. 147) identifies the process of recruitment for this task as democratic, inasmuch as the labor force and assembly members represent all families of the community. This conception tends to mask the element of coercion and limiting of alternative courses of action possible in communities of this kind. The residual (nonmigrating) population must learn to comply with expectations in a very traditional, nonassertive manner, in much the same way as in an Indian pueblo or in the Andean area in Latin America. It is egalitarian only in the sense that the interests of all families and households are equally represented. The common good, however, is maintained in an authoritative manner, and is coercive to the extent that pursuit of that good requires a total commitment on the part of all citizens.

for the most part ignorant will defend the value of that something as much as—or even more than—they would if they had free access to information about it (Festinger 1957, chap. 8). Therefore, by virtue of the important role of women in early socialization in these societies, young males acquire a psychological commitment to central values that is reinforced upon induction to adulthood and learning about the substantive basis of these beliefs. In this way defensive attitudes are transmitted anew and very early to each generation of males, and compete with whatever knowledge and alternative ways of thinking they may acquire from the outside world.

Taos and Picuris Pueblos: A Controlled Comparison

Defensive adaptation, then, is a response to perceived environmental pressures, more particularly, to certain dimensions or variables of these pressures. As a prototype of this interaction between group and environment we might consider briefly the experiences of Taos pueblo, and compare them with the experiences of a close neighbor, the pueblo of Picuris. The two societies are especially valuable for our purpose because they share a long history of settlement and tradition in the same area with a common past (Eggan 1950, pp. 291–324).

Archaeological evidence suggests that, prior to contact with agents of Western society, the ancestors of these peoples defended themselves against the encroachments of other Indian tribes that invaded their territories. Over the past 400 years they engaged in a number of hostile encounters with Spanish colonists. Later, in their relations with Anglos, they had to compromise over land rights. When Coronado first visited them shortly after 1540, he estimated that they had roughly comparable populations. His estimate was around 3,000 inhabitants for each. Recent investigations at Picuris indicate this community (and Taos by implication) in fact had around 2,000 inhabitants. From his description, and from more systematic investigation, we have every reason to believe that they shared a very similar social structure and culture. For reasons that are not entirely clear, both suffered dramatic population decreases at least through the middle of the eighteenth century, probably in part through the introduction of new diseases and in part through defections to the Spanish settlements. The census for 1890 lists, in round numbers, 400 and 300 persons for Taos and Picuris, respectively. From that time onward there was a steady increase in the former and a slight reduction in the latter, both suffering from the influenza epidemic after World War I. Today, however, Picuris has barely 100 persons, while Taos has over 1,200. As we shall see, these figures are closely related to corresponding differences in cultural vigor.

At the turn of the century environmental stresses on the two communities began to diverge in what turned out to be important ways. Consider very

briefly certain salient events at Taos during the periods of Mexican and Anglo political control. Boundaries were fixed (a process that was in adjudication until very recently), thus stabilizing the ratio of people to resources among a traditionally agricultural people. A new community, part Spanish-American and increasingly Anglo in composition, only a mile from the Indian pueblo, attracted a variety of settlers and visitors, notably merchants, traders, teachers, builders, service persons, artists, and tourists. Pressure for land was thus accompanied by the opening of new alternatives for employment—catering to the tourist trade, jobs as domestics, hotel aides, and dancers, service-station attendants, and skilled workers.

People continued to think of Taos citizenship as a good thing, but continuation of that entity was bound up with an agrarian adaptation, a supporting belief system about man's relation to nature and related ceremonial activities. Increasing numbers of nonmembers in their midst, new jobs, and a conflicting set of rules regulating work habits unpredictably interfere with pueblo expectations and demands. To render services and participate in activities of central concern to the village, one must leave the work in which he is engaged elsewhere. An individual who can schedule his agricultural activities in traditional ways to conform with ritual responsiblities finds himself in trouble when he leaves and returns to a 9 A.M.–5 P.M. wage-earning job, to which he commutes outside the pueblo, in what to his employer appears to be a capricious and unpredictable manner.

The settlement has been encircled and Taos leadership confronted with what it sees as a problem of cultural survival. If we add (1) the presence of the United Pueblo Agency in Albuquerque with constantly changing, imperfectly understood policies originating in Washington, and (2) modern transport that enables dissident individuals to take jobs away from the village, often some distance away, and return only irregularly, we can see how complex the environment must now appear to the great majority of the group that is committed to continuity of the cultural system.[13]

In the same period many of the stresses observed at Taos have confronted Picurenses, but in a different way. Children of both pueblos have attended school through high school for many years. Taos managed to send its children to Indian schools in the community. Even after integration, when there was much pressure to have them attend public schools with Spanish and Anglo children in the adjacent town, the Council prevailed upon the Indian Bureau to maintain the reservation schools to which most families continued to send their young. In this way they had some control over courses taught, the behavior of teachers, and the removal of young men at a certain age for required ceremonial training in the kivas.

Only elementary education has ever been available to Picuris children

[13] For a more detailed analysis of stress and social process in Taos pueblo, see Beals and Siegel (1965).

on a reservation school. When the school integration law was put into effect, the Indian school was abandoned and children sent to the public school in the neighboring Spanish-American community of Peñasco. Boys and girls who continued their education went to all-Indian boarding schools in Santa Fe and Albuquerque, where the curriculum was created by Anglos on the assumption that they were preparing the graduates exclusively for special categories of skilled and semiskilled occupations. There was thus a marked contrast between the two communities with respect to the amount of often conflicting information, norms, and values to which the young were exposed and possibilities of control by local authorities over this varied exposure.

Picuris is a few miles removed from the main highway that, by contrast, passes hard by Taos. Only one Spanish-American village is within walking distance, and it has no regular job opportunities. To opt for urban employment means leaving Picuris; the closest town is twenty-four miles away (Taos). There is no bus service between these communities and only one person owns an automobile. Individuals who leave must rely almost exclusively upon secondary languages, English and Spanish, and forgo many of the emotional gratifications associated with the use of the native language (especially participation in pueblo-centered activities like the ceremonial calendar and household rituals that make use of intensive social interaction to which they are socialized very early in life).

Elsewhere I have summarized the contrasting nature of pressures and outcomes in the two communities as follows:

> Perhaps the single most important factor that distinguishes the recent history of Picuris and Taos is the different impact of stress created by environmental changes. The proliferation of alternatives created in the immediate vicinity of Taos challenged the conventional power system, but in so doing strengthened it. The community as a whole began to take the shape of a nativistic movement. We might say that what happened in the process of this confrontation was the development of a keen sense of urgency in adapting to a perceived threat to cultural survival. In Picuris, by contrast, it is just this sense of urgency that is lacking. Being removed from the centers of development there is, so to speak, leisure in the contemplation of alternatives, perhaps too much leisure to confirm themselves in their beliefs. Disassociation from the pueblo, on the other hand, has seldom been a possible alternative except for those who have been incompletely socialized. The net result has been a classic example of pervasive anomie in the generation of young adult males (ages 16–38), partial integration in the next older generation (ages 40–58), and an integrated generation of elders (ages 60 and older) (Siegel 1965, p. 205).

Dimensions of perceived stress.—Examination of certain classes of historical events at Taos and Picuris will facilitate analysis of environmental pressures as people see them. From these events perceived stress would appear to have at least the following dimensions: duration, intensity, complexity,

ambiguity, control, and effect on group image. Until approximately the end of the nineteenth century, members of both groups might well have perceived the effect on their environment of the intrusion of others in very similar ways. Clearly, it was of long duration; each had had to contend increasingly with agents of Spanish and Anglo tradition for over 350 years. It was unambiguous (the "others" are clearly different and threatening), controlling their actions and depreciating them, as was explicit in the colonizing, missionizing, and politically defining efforts of first one and then another dominant group. If we think of intensity in terms of frequency of interaction, their experiences probably differed little in this regard.

From the turn of the century, however, certain of these features began to vary in magnitude. Duration, control, and effect on group image remained roughly the same. But the construction of a new road and motor transport, which left Picuris relatively isolated, generated a very pronounced increase in interaction between Taosenos and nonmembers. Not only were there many new occasions for rubbing shoulders at Taos—curious or interested outsiders and artists, new enterprises, amusements, and the like—but they confronted the pueblo dweller almost continuously in everyday life. Individuals and the group as a whole were faced with the problems of coping with this new situation. As one alternative, an individual might have been left free to make his own decisions: remain traditionally occupied within the pueblo, communicating to a very limited degree with outsiders; divide his time between both worlds; or physically detach himself from the group, either permanently by emigration or by leaving for indefinite periods.

The strategy actually employed was to reinforce the value of group membership by selectively emphasizing traditional symbols: land, language, transcendental beliefs, and their enactment in ceremonial drama. Traditionally influential officeholders—heads of ceremonial associations and, after Spanish control, secular officers—at some point simply defined as threat the environmental context of their lives which had earlier been perceived as much more complex. They controlled the level of intensity of intercultural interaction by specifying the kinds, frequency, and content of relations, as well as innovations (such as new dance forms, styles of dress and competing religious beliefs, grooming, way of expressing grief, and so forth), that were permitted. The result was a defensive adaptation that revealed all the properties of this phenomenon described earlier.

At Picuris, where the belief system was essentially equivalent to that of Taos, the aspects, but not the magnitudes, of environmental change were also very similar to those of Taos. No such increase in stress intensity occurred; the environment remained very complex in terms of models, and ambiguous concerning the messages they received. We observe, also, no such monolithic interpretation of such pressures. Some defined the situation

as threat, and emphasized a traditional solution; others, as new opportunities and new wants. An increasing majority, however, came to be confused by multiple choices of both valued goals and means of achieving them, to the point of immobilization of any effort and normlessness.

Interaction between Group and Environment

It should be clear from this discussion that we must assume a continuing interaction between environmental pressures (as perceived by members of some social entity) and the structure of groups in order to predict subsequent responses that the latter will make to environmental transformations.[14] Some previous tendency in the direction of centralized sociopolitical organization is probably necessary, in order to mobilize efforts of individuals to cope collectively with urgently felt needs for a more or less satisfying way of life in the face of forces that are perceived to be opposed to such an effort. It has been suggested that the necessity for controlling the use of water in irrigation-based agriculture, for example, very possibly led to centralized community leadership among the eastern pueblos well before the Spanish contact period.[15] In some instances where one encounters a group of individuals which had previously had a minimum of structuring, an effective appeal for value-oriented identity might produce a social statement of such a need in a certain segment of the population. The Black Muslims are an outcome of such appeals among the northern urban Negroes of the United States.

By the same token, if the group-environment interaction process in the past had stabilized in a structure that was ill equipped to cope with new and traumatic perceived stress, we might predict an outcome other than defensive adaptation, no matter how closely the stress values approximated those described for Taos pueblo.

Consider, for example, the history of events among the Yir-Yiront, an Australian aboriginal society on the west coast of tropical Cape York peninsula. Sharp (1952) informs us that in 1864 a group of Yir-Yiront hunters had a devastating encounter with a group of white cattlemen in which the majority of their number was killed or wounded. Seventy years later no memory remained of this episode.[16] Much later a Protestant

[14] This point of view is consistent with modern systems theory. For one of the most articulate applications of systems to a particular domain, see Easton (1965). Vickers (1959) emphasizes, among other things, perceived stress ("the organism's interpretations of events in relation to itself"), in contrast to objective criteria of stress, in his analysis of the interaction between the organism (or group) and environment. This is the position I assumed in the examination of defensive postures.

[15] See Esther S. Goldfrank (1945). Although she deals principally with the Navaho, Dr. Goldfrank considers also data relating to the pueblos.

[16] The evidence that Sharp provides suggests, among other things, that *sporadic* stress encounters, however traumatic, will not lead to change either in the direction of defensive structuring or in any other direction away from the *status quo ante.*

mission was established on the outskirts of their territory. The mission made steel axes available to any individuals who would participate in activities which they sponsored. From this apparently benign, noncoercive interference there ultimately followed far-reaching disorganization of social life. Among the Yir-Yiront, production and use of stone axes was linked to ideas about different rights and duties between males and females, the prestige of older men, the maintenance of political ties with distant tribes through trading partners from whom the stone for producing the axes was procured, and tribal myths explaining the origins and continuity of tradition. These activities were generated on the basis of dyadic interactions—a man and his trading partner, a husband and his wife, a father and his son, an older brother and younger sibling, and so forth. Even nonroutine activities that involved larger groups, such as hunting or ceremonials, were organized through a series of interlocking dyadic relations. The rules by which steel axes could be procured and used contravened traditional principles. Since specific individuals, who could see the threat to cultural integrity posed by the mission-sponsored activities, possessed no mechanism for mobilizing and controlling public opinion, the access of once-dependent individuals to the substitute implements led step by step to the loss of all other elements. Traditional norms then ceased to operate and behavior became extensively disorganized.

DISCUSSION

Defensive structuring, I would predict, will be found in any group, under stress and with limited resources, that seeks to survive *as a group* by maintaining or developing a special identity. The general lack of violence—or explicit ideological opposition to violence and disciplining of members guilty of such behavior—that such societies exhibit does not imply a total absence of aggressiveness. Beliefs like the evil eye, witchcraft, and other projections of tension release by malevolent accusation do occur, as does indirect aggression directed toward nonmembers in, for example, offensive humor, but they all revolve around discipline and constant concern for proper conduct. Changing conditions that challenge the perception of outside stress that is seen as a menace to the continuity of the group *as a whole* would, *ex hypothese*, lead to transformation of values. Authoritarian controls would be less effective, individuals would manifest more anxiety-reducing behavior (they would drink more and more often without incurring punitive responses and engage less frequently in intensive interaction with others, for example), and so forth.

Furthermore, defensive adaptation does not entail complete withdrawal from the larger society. All groups of this sort reveal some measure of interdependency with others; their very survival depends upon the decision by those who surround them to let them survive, for example. The

point, however, is that their participation in the larger society is very selective—the greater the perceived stress, the greater the selectivity and severity of controls.

Defensive Adaptation and Theories of Social Movements

A number of defensive societies had their origins in social movements—for example, the Mennonites, Amish, and the Hutterites as sectarian movements in Europe, and the Mormons in America.

Smelser (1963) makes a distinction between a norm-oriented movement and a value-oriented movement. The NAACP is an example of the former. In its attempt to advance desegration in the United States, the NAACP is critical of certain practices in society but not of its fundamental democratic values. It proposes reforms as a more adequate realization of those values but not a far-reaching cultural transformation. A value-oriented movement, on the other hand, criticizes values; the Black Muslim movement is said to be value oriented and to advocate change at the core of society. "God is black," their leaders assert, and thereby challenge the assumption that "God is white" with all that it connotes. In a very large sense, however, setting forth of this dogma is simply a dramatic way of establishing a symbolic basis for identity and consensual commitment among individuals drawn from a distinctive but relatively unorganized social aggregate. In its efforts to socialize new members, the Black Muslims clearly stress central values of middle-class whites. The challenge to values of the larger society lies in the further assertion that the means by which this can be achieved is by complete segregation and new nationhood rather than by desegration and increased meaningful interaction. The contrast with the NAACP in this respect is in means and not in goals. There is nevertheless a real difference in strategy; one is defensive, the other is not.

Many defensive societies bear a close resemblance to a certain stage in the development of what Wallace (1956), in a stimulating paper, has termed "revitalization movements," which are efforts to create a more satisfying culture from cumulative dissatisfactions. They emerge well along in this process, after adherents have overcome hostility from the dominant community and a new cultural state, if suitably stress reducing, has become routinized and expressed through a new organization.

In a very impressive scholarly contribution to the study of social movements, Aberle (1966) distinguishes among transformative, reformative, redemptive, and alternative movements. The former two aim at social-cultural change (embracing both value-oriented and norm-oriented movements); the latter two, at a change in individuals (for example, as did the Peyote cult, the Jewish shtetl, and early Christian communities). Aberle then proceeds to identify constant and variable features of each and to

indicate the significance of relative deprivation, reference groups, and environmental contexts in relation to choice of one or another type of movement. His observations are broad ranging and repay careful reading, although he makes no effort to construct an exhaustive theory of the phenomenon. By concentrating on process, he understandably fails to indicate common structural characteristics of defensive adaptation that cut across several types of movements. Among the possible alternative reactions to status deprivation, however, the author does include a "defensive insistence on the rightness of its behavior in the face of known, or imagined, opposition" (p. 327). And, in discussing the context of social movements, he hypothesizes that: "transformative goals are most likely when a deprived group is segregated spatially or socially and when its involvement with the larger social order is either slight or decreasing or both" as when confronted with a superior technology or physical enclosure (p. 330). He would, I suspect, put Taos pueblo in this category. One might argue, on the other hand, that Taos leadership has mobilized its efforts to *prevent* transformation or even redemption through changed behavior, by a process of involution.

Closed Corporate Communities

Eric Wolf has analyzed in some detail the development and characteristics of villages that were exploited or were established to be exploited at the margins of haciendas in Middle America and the Andean Highlands and of plantations in colonial Java. In both areas a concentration of native peoples in bounded communities, largely closed in citizenship to original members and their descendants, occurred in direct response to resettlement policies of colonial authorities. The manifest purpose behind the concentration of those respective populations was to provide a permanent labor supply for the large-scale agricultural enterprises of European managers.[17] This goal was achieved by locating and isolating the peasants on scarce land; by restricting subsistence to what could be produced by traditional techniques and procured (in Latin America, at least) by small exchanges of diverse products in the market system; and by creating additional incentives for the peasant to offer his labor to the entrepreneurial sector by levying special charges upon him.

Once confronted with enclosed and limited land, villagers developed a variety of techniques for protecting their meager resources. They monitored the communication of members with the outside, forbidding the sale of scarce land to aliens and limiting the flow of outside goods and ideas

[17] As Wolf (1957, p. 8) points out, "closed communities of this sort may be a product of peaceful migration and resettlement, not an offspring of conquest as such, but rather of the dualization of society into a dominant entrepreneurial sector and a dominated sector of native peasants." All groups to which he refers, however, are land-based peasants.

into the community (Wolf 1955, p. 459). That is, they deliberately denied access to information about new alternatives in a climate of defensive ignorance.

The threat that natives came to perceive consisted not so much of colonists and controllers of the market but of outsiders of any kind, especially including persons from other similar communities, who wished to "buy in" or seek membership through marriage. Wolf also informs us that this kind of corporate community in Latin America began in pre-Columbian times and grew out of systems strongly dominated by the Incas. And, in another connection, Service (1955, p. 418) points out that the kinds of action Spanish colonists used in controlling natives as a labor force was governed by varying characteristics of native culture: the more alike the structural features of Spanish to Indian the greater the success in this regard. Hence their greatest success vis-à-vis the hierarchically organized societies of the Andean region and "high culture" areas of Middle America (in other words, where prior organization facilitated defensive self-maintenance).

Closed corporate communities of this sort came to exhibit most of the properties we have described for defensive structuring. They are politically centralized and authoritarian; they carefully allocate broad power, the validation of which usually depends upon the discharge of important ceremonial functions to a small number of individuals. Control over behavior, we are informed, is also reinforced by a variety of mechanisms other than the exercise of authoritarian power. One is institutionalized envy (malevolent accusation), such as gossip and the fear and practice of witchcraft. A second is the insistent training of the young to routinize their actions and thus to make them fear the consequence of expressive behavior. To the extent that this training is successful, they will avoid the novel and actively commit themselves to what is socially approved.

Some of the specific features of corporate communities, however—the relation to land resources, a dualized structure consisting of dominant entrepreneurs and subordinate peasants, and involvement in a market-place system—are peculiar to certain peasant societies. Hence, like the products of many social and revitalization movements, they should be considered taxonomically to be members of a more general class of defensive societies. At other levels, the latter includes groups like the East European ghetto, which is not an agricultural community. Others, like European Alpine communities or the eastern pueblos, are neither products of conventional revitalization movements nor labor-producing groups for agricultural entrepreneurs, nor do they carry on even limited exchange transactions in a system of markets.

Defensive Adaptation and Culture

Defensive coping in the first place is a response to stress and perceived threat to continuities of, or barriers to, a meaningful way of life. It is a strategy that occurs when protagonists have limited resources for direct and possibly violent confrontation with the source(s) of frustration. Nevertheless, there are many instances of aggressive collective confrontation in the face of limited resources. Activist and so-called militant groups in America today are cases in point. This suggests that it is necessary to take into account something more than either threat or limited resources in order to predict a defensive outcome.

An understanding of defensive adaptation ultimately is derived from the single most fundamental attribute of culture, namely that culture is (symbolic) communication. People who respond positively but defensively to perceived threat from whatever exogeneous source—acculturation, urbanization, industrialization, urban-rural interaction, and the like—must either have a tradition, or, out of a felt need, succeed in creating one. In either case, sharing at least core values over the long haul requires the means for sustaining regular and frequent communication. Minority ethnic enclaves, whether composed of immigrant groups or small-scale societies that came to be surrounded by dominant others in the course of settlement in American history, meet this requirement. In addition to groups specifically mentioned in this essay, we should include the Spanish-Americans in the Southwest and Mexican-Americans in the West, Chinese, Italians, Irish, and so forth.

Not all of these groups perceived a danger to their cultural integrity, hence made a defensive adaptation. Curtis (1952) provides an interesting example of cognitive change in this direction. The data for this study involved adjustment patterns of a small minority of Catholics who had settled in an otherwise preponderantly Mormon (approximately 93 percent of the total) small Idaho city (total population, about 8,000). The Catholic enclave, instead of losing elements of value identification in their relations with the Mormons, according to a theory of social marginality, actually exhibited considerably more cohesion and support of communal values than do the latter. In this situation the church authorities exercised greater control over the individual's behavior than was true in comparable urban parishes from which immigrants came. For example, the Irish Catholic element, comprising about 30 percent of the total within this group, revealed almost none of the traditional pattern of drinking which in fact came to be severely frowned upon. Family-centered internalized control in other areas of overt behavior was similarly reinforced by the same external authorities. These conditions obtained despite amiable relations between Catholics and Mormons generally. Leaders of the Catholic enclave

perceived danger of group extinction. They were also able to communicate the reality of this threat to members and to enforce latent control over individual behavior to emphasize collective goals.

The Jews, with such a long historical tradition, are a special case. It would be possible and useful to investigate response patterns at various peak periods of stress in the trajectory of their experiences from classical to modern times. More directly relevant, perhaps, it would also be instructive to study comparatively the immigrant population of East European shtetl Jews in relation to second and third generation native born (see, for example, Goldstein and Goldscheider 1968).

Shared value commitment need not restrict itself to societies in the conventional sense of the word. To attract and hold members in some kind of long-range organization with a sense of shared urgency, however, requires rapid communication that approximates face-to-face interaction. These are precisely the conditions that, in contemporary America, enable the creation of viable defensive groups, like the Black Muslims, from broadly distributed sectors of society.

People who participate in defensive organizations feel deprived in their relation to dominant institutions. They exist at the sufferance of others who have the means, should they wish to employ them, to suppress completely their efforts at independent cultural identity. Dependency behavior and subordination of decision making to powerful centralized leadership develops out of a necessity to cope rapidly with day-to-day situations with which the group may be confronted. So, too, training for impulse control has strategic value in these groups because they possess limited resources and in the long run cannot hope to succeed by violent means.[18] They might, of course, attempt to do so by co-opting large numbers of the dominant society to their cause, but in this way they run the risk of losing or weakening their identity. It is interesting in this regard to note the general detachment of American Indians from active involvement in and support of the civil rights movement. What the blacks are struggling for, the Indians feel they already have won, and they are not about to jeopardize their cultural vitality by participation in a larger incorporative organization.

When defensive adaptation does occur, it appears always to display the same structure. Perhaps it is replicated in its essential features because for any group, category, or aggregate of people, it is the most economical and efficient means for coping with the problem of perceived severe stress

[18] If we were to inquire further, we would probably see that dispersed defensive associations tend to attract and to hold within the central core persons characterized by strong dependency needs, however varied their social and cultural backgrounds (substantial numbers of dissidents are sloughed off or removed in one way or another), and then to weld them into a novel organization.

applied over a long period of time. Assuming that the interaction between group and environment is continuous, I would further predict that the reduction or removal of perceived stress will be accompanied by changes in behavior and subsequent transformation in the defensive characteristics of these units.[19]

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[19] Both Orthodox Jewish and Mormon defensive traditions in America, for example, stress the value of formal learning. In so doing they embrace a paradox within the context of the larger society, namely the alienation of the young who are exposed to important conflicts between school and home and church by virtue of the content of *what is learned* and *to what purpose.* This paradox is only partly resolved by the establishment of parochial schools.

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Ethnic-Group Cohesion[1]

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Sources of variation in two measures of ethnic-group cohesion are explored. The general model of the breakdown of ethnic-group cohesion suggested by an older literature is not supported. A relatively simple model develops in which formal education plays a dominant role.

This study develops a model to explain variation in two measures of the breakdown of the structural and cultural boundaries of a large and, as yet, basically unassimilated white ethnic minority group.

The structure and persistence of ethnic communities have been the subject of much attention by sociologists, and there is a large and well-known literature in the area. In this literature, there is a remarkable lack of system in language which mirrors a plethora of concepts related to the problem of the viability of group structure and culture. What in some studies is called a high (or low) state of assimilation is called, in other studies, a low (or high) state of cohesiveness, solidarity, group morale, acculturation, or integration.

The problem of the viability of group structure and culture is complex for more than just semantic reasons. At base the problem is the simple and familiar one of the use of a single term to denote quite discrete phenomena, coupled with the use of numerous terms to denote a single phenomenon—hence the tendency noted by Gross and Martin (1957) for nominal and operational definitions not to square with each other.

In this study I refer to the problem of maintenance of the integrity of group boundaries as the problem of cohesion, and to the process by which the boundaries of ethnic groups are broken down as one of assimilation. Assimilationism, then, is a set of attitudes favorable to assimilation and hence inimical to group cohesion.

There are essentially two general models of the process by which ethnic and other groups first lose cohesiveness and finally their entire identity, although these have been elaborated into many subtypes by various authors.[2]

[1] I am indebted to Lylian Klimek of the University of Alberta for bibliographic assistance vith this paper and to the Ukrainian Canadian Research Foundation and the Department of Citizenship and Immigration for funding the original study. This report is done rom data gathered for Hobart et al. (1968), but it does not duplicate any part of that vork. I am also indebted to a number of people for assistance, but especially to Richard . Curtis and Jerry L. L. Miller of the University of Arizona.

[2] Gordon (1964, pp. 60–63) describes seven types of assimilation, but all fall into either ne or the other of the two general types described in this text. He makes "structural ssimilation" (see my no. 2 below) the "keystone" of assimilation (p. 81).

1. *A model based upon attitudes favorable or unfavorable to the group.*—Cartwright and Zander (1960), among others, define cohesiveness as: "the attractiveness of a group for its members." For this model, appearance of attitudes unfavorable to the group is a sign of decreasing cohesiveness, and high consensus on group norms is a sign of high cohesiveness. Factors which lead members to dispute the basic tenets of group belief are regarded as sources of lowered cohesion (Rose 1949, 1952, 1965, pp. 674–704; Park 1924; Gordon 1964).

2. *A model based upon involvement and interaction.*—It is assumed that the penetration of outside institutions by group members and the consequent formation of intimate personal relations outside the group weaken group structure. It is assumed that persons with intimate personal relations outside the group are less committed and more likely to defect. Factors which lead members to form close ties with persons outside the group are regarded as sources of lowered cohesion (Cartwright and Zander 1960; Seashore 1954; Pepitone and Kleiner 1957; Gordon 1964). Because sociometric models of this type have been used rather indiscriminately, it should be pointed out that they assume that the member has a good deal of choice in the persons with whom he forms primary relations. In the case of many types of natural groups—for instance, ethnic groups—this may not be true There may be constraints of many kinds placed upon the member. Used by themselves, sociometric models are probably not altogether adequate for groups in which membership is not voluntary and which may put restraints upon the range of a member's outside associations.

There are many studies of ethnic minority communities and immigrants Recent studies have tended to focus on the assimilation of the immigrant into the new society (Campisi 1948; Eisenstadt 1951, 1952*a*, 1952*b*; Jones 1950; Taft 1961; Richardson 1961). The older, Chicago-style studies focused on the minority community itself, and all were at least secondarily concerned with the problem of the maintenance of a viable group (Bogardus 1943; Brown and Roucek 1945; Finkelstein 1949; Hughes 1943; Kosa 1957; Miyamoto 1939; Park and Burgess 1924; Poll 1962; Warner and Srole 1945; Thomas and Nishimoto 1952; Young 1931; Young 1932). This literature suggests that increasing social differentiation leads to a decrease in ethnic-community cohesiveness Increasing differentiation in status, in the number of types of positions members occupy, in the division of labor, in residential area type, and in religious affiliation all lead to decreases in consensus on aspirations and norms and eventually to the dissolution of the group. This literature consists, for the most part, of case studies, and case studies seem to have as an inherent trait that they lead researchers to conclude that a large number of variables acting independently contribute in an additive manner to the observed effect. My original hypotheses were derived from this literature and were quite simple: any index of increasing or increased

social differentiation should be associated with primary relations outside the group and with lack of enthusiasm for ethnic culture, and any variation in the two types of cohesion I was able to explain would be explained by a fairly large number of variables acting independently and in sum.

THE STUDY

The study was carried out over a three-year period from 1963 to 1966 and is a stratified, systematic sample survey of adult Ukrainian-Canadians chosen from voting registration lists in the province of Alberta. In Canada, the best source of samples of adults is the comprehensive voting registration list. Ukrainians were identified by name from the voting registration lists by a panel of judges. Interviewing proved that errors in name identification were no more than 10 percent. Most Ukrainian names end with the syllable "uk" and are therefore easy to recognize. Errors of identification occurred in the cases in which Ukrainians share names with other Slavs. The sample of 809 was stratified to produce rough balance in terms of age and sex, urban and rural residence.[3]

Ukrainian-Canadians are not a new immigrant group of the type studied by Eisenstadt (1951) or by Taft (1961) and Richardson (1961), but an "old" immigrant group now beginning its fourth generation in a society which is officially pluralistic. The respondents live in a province which is ethnically heterogeneous and in which it would be difficult to specify the characteristics of the mass culture to which they might be absorbed were some kind of melting-pot model applicable. As Vallee, Schwartz, and Darknell (1957) and Porter (1965) have pointed out, however, there are some serious objections to the application of this model to Canada.

The respondents were drawn from three small towns and a city of 400,000.[4] Two of the three small towns are predominantly Ukrainian in population; the city and one small town are ethnically heterogeneous. In addition to Ukrainians, there are German, Dutch, and Italian minorities of substantial size and high definition. The melting pot may occur in the future despite the official pluralism of Canada, but the present reality is a mosaic with clear social boundaries between Jew and Gentile, German and Italian, Ukrainian and Dutchman, "Frenchman" and "Englishman." In addition to restriction of interaction and pressures against intermarriage between members of different ethnic communities, there is a certain amount of residential segregation in Edmonton. Although the term "ghetto" is not applicable, areas of the city do have reputations for being German, Italian, Ukrainian, or Jewish; and a check of the voting registration list does show

[3] No attempt was made to locate Ukrainian women who had married outside the group. One attempt to study persons who had changed their names was a failure.

[4] Edmonton, Lamont, Willingdon, and Thorhild, Alberta.

heavy concentrations of ethnically identifiable names. It would be a serious error to draw a parallel between the white ethnic structures of Canada and the United States and to equate the Ukrainian-Canadian community with, let us say, the Polish-American community (see Porter 1965, pp. 68 ff.). The Ukrainian community in Canada is essentially unassimilated. Ukrainian culture flourishes in the new country. Ukrainian is heard on the streets and in the pubs of all western cities and is almost the exclusive language of many small towns. The prairies are dotted with the domed churches and double-barred crosses of the Eastern churches, and the dionysian wedding customs of the eastern European peasantry persist and form almost the entire social life of many small Alberta towns. Ethnic restaurants and groceries are present and are treated in a sense quite different from that implied by a self-conscious "return" to ethnic identity (see Herberg 1960). Ethnic fraternal and cultural associations exist and are very active. Extremely acidic political and religious conflicts still persist between first- and second-generation Ukrainian-Canadians who are leftist or rightist vis à vis the Ukraine.

Ukrainian immigrants to Canada have been predominantly either farmers or unskilled laborers; very few have been skilled laborers or professionals. The vast majority of these immigrants settled in the prairie provinces. Now in its fourth generation, the Ukrainian community has penetrated all levels of the stratification system, but Ukrainians are proportionately slightly underrepresented in all categories of white-collar, business, and professional work and heavily overrepresented among farmers and farm workers (Hobart 1968, p. 135; Dominion Bureau of Statistics 1961).

We are dealing with an established ethnic group which has maintained cultural and structural autonomy, and we are concerned with the sources of pressures toward breaking down this autonomy which emanate from within the group.

DEPENDENT VARIABLES

Assimilationism

Models of group cohesion which are based upon consensus concerning the worth of the group are relatively easy to apply through the use of attitude devices. The respondent's enthusiasm for Ukrainian culture, or the lack of such enthusiasm, was measured by a simple three-item device. In each question the respondent was offered a pair of alternatives, one pole of which implied a willingness to abandon ethnic norms and the other, unwillingness. The items were limited to simple alternatives because interviews were conducted in both English and Ukrainian and items of this type present no difficulties in translation.

1. Some of our customs should no longer be practiced because they delay acceptance of Ukrainians into Canadian Society. Do you agree or disagree?
2. Do you think that intermarriage between Ukrainians and non-Ukrainians should be discouraged?
3. How do you feel about Ukrainians changing their names to English names? Do you feel it is:
   a) never justified;
   b) justified if the person's success in his work depends on it;
   c) up to the individual.

A respondent who answered "agree" to question 1 or "disagree" to question 2, or who agreed with part *b* or *c* of question 3, will hereafter be called an Assimilationist, and we will call the device Assimilationism. Assimilationism is not a scale. We are identifying as Assimilationists anyone who responded in an assimilationist direction on *any* of the three questions. Slightly over 35 percent of the respondents are Assimilationists.

Ingroup Choice

Models of group cohesion based upon involvement of members with each other or with outsiders assume that intimate ties outside the group indicate lowered cohesion These models may be operationalized with one of the sociometric questions. In this case we asked the respondents: "Think of your three best friends; how many are Ukrainians?" If the respondent's three best friends were all Ukrainians, he will be described as having had high Ingroup Choice. If the respondent named one or more non-Ukrainians among the three, he will be described as having had low Ingroup Choice. About 30 percent of the sample have low Ingroup Choice.

INDEPENDENT VARIABLES

The literature generally suggests that a large number of variables indicative of social differentiation should be associated with the two models of cohesion, each contributing independently to a total effect. The populations studied derive from a rural, farm base, with low levels of education. Any variable describing movement away from this type of population toward a relatively more educated urban population of heterogeneous occupational status should be associated with assimilationist attitudes and primary relations outside group boundaries. This is not, in fact, the case. Either the Ukrainian population does not conform to the pattern observed in other studies or social differentiation does not directly lead to loss of cohesion. The model which develops to explain variation in the two dependent variables is quite different from a simple additive model and includes only four variables: occupational status, farm or nonfarm labor (hereafter called workplace), residence in an ethnically heterogeneous or homogeneous com-

munity (hereafter called residential site), and years of formal education. Furthermore, as will be shown, these variables do not function as would be expected on the basis of previous literature.[5]

A fairly wide range of variables has no independent effect on either dependent variable. Apparent relationships between various indicators of both intra- and intergenerational social mobility and the dependent variables are a product of maldistributions of occupational status and education. Geographical mobility and changing from a traditional to a nontraditional church are unrelated to either Ingroup Choice or Assimilationism. Peculiarly, even generation, which would seem to be an indirect indicator of widely variant cultural experiences, is negligibly related to either dependent variable once residential site and education are controlled. Apparent relationships between urban or rural residence and the two dependent variables seem to be a result of the operation of residential site.[6] Only four variables seem to be independently related to the dependent variables.

Occupational Status

High occupational status describes respondents who held white-collar jobs if they were nonfarm laborers, or farmed five-eighths of a section (400 acres) or more if they were farmers. Low occupational status refers to respondents who held skilled, semiskilled, or unskilled jobs if they were nonfarm laborers, or farmed less than five-eighths of a section if they were farmers. Our decision to classify farmers as having higher or lower status on the basis of the number of acres farmed is an arbitrary one. All the farmer respondents listed themselves as "general farmers" but devoted a large percentage of their acreage to grains. Farmer stratification in the northern Great Plains areas is exceedingly complex and involves a number of purely noneconomic variables. It is "better," for instance, to farm wheat for profit than to run grain through pigs, although the latter is more profitable and infinitely safer Although we have only very indirect evidence, we suspect that prairie farmers acquiesce in the romantic myth of being wheat farmers in good years but are rational enough to hedge their bets with other crops such as oil grains for the normally bad years. Although a wide spectrum of information was available, it seemed that the number of acres farmed was the best single indicator of a large number of other status variables.

[5] These variables taken together explain 64 percent of the variation in Assimilationism and 46 percent of the variation in Ingroup Choice. This is equivalent to multiple r's of approximately .8 or .7, respectively (see table 3).

[6] Apparent relationships between age and sex and the dependent variables are entirely a product of the maldistribution of education in this sample.

Residential Site

The sample was drawn from a middle-sized city and three small towns in its hinterland. Two of the small towns come close to being ethnically homogeneous—they are Ukrainian towns in the most important sense—one could probably survive better without English than without Ukrainian. The larger city and the smallest of the towns are ethnically heterogeneous. The distinction made in this analysis is between residence in a homogeneous community and residence in a heterogeneous community. Residential site seems to account for almost all of the observed relationships between "urban" and "rural" residence and the two dependent variables.

Workplace

We distinguish between farm and nonfarm labor. This distinction is between respondents who make their living from farming or from other sources regardless of residence on farms, in the small towns, or in the city. This variable was discovered accidentally but seems to operate independently although at relatively low power.

Education

Education refers to formal years of schooling. The sample includes both native and foreign-born respondents, and every attempt was made to equate European with Canadian schooling. Nevertheless, a number of respondents were dropped from the analysis at this point because their education in Europe simply could not be equated with anything in the Canadian system. High education describes respondents who had some high school or more. Low education describes those who had less. The distinction between high and low was made to maximize cell size rather than for theoretical reasons. A more detailed breakdown of education strengthens rather than weakens the association between education and the two dependent variables which is described in the following text.

PROCEDURES

The analysis of data proceeds by multivariate analysis of dichotomous attributes according to the model developed by Coleman (Coleman 1964, esp. pp. 193–213).[7] This procedure is analogous to multiple regression but was designed for dichotomous attributes and is a vast improvement over the always tricky, frustrating, and uncertain process of visual inspection of a highly detailed percentage table involving two, three, or four independent variables. This technique permits analysis of departures from multivariate

[7] This analysis would not have been possible without the work of Miller (1968). I am deeply indebted to Jerry L. L. Miller and Richard F. Curtis for assistance.

additive effects by providing both observed and expected cell frequencies; that is, it identifies interaction effects. Departures from additivity manifest themselves in discrepancies between observed and expected frequencies. Because the relationships between three of the four independent variables and the two dependent variables are not simple additive relationships, detailed percentage tables will be presented for illustration. The amount of variation explained is based on weighted estimates due to the small size of many of the cells in the total tables (Coleman 1964, pp. 203–4). This procedure seems superior to visual inspection for a number of reasons, not the least of which is that in measuring effects it provides a precise summary statement of results.

TABLE 1

FOUR VARIABLES ON ASSIMILATIONISM

	High Occupational Status		Low Occupational Status	
	% High Assimilationism	Total N	% High Assimilationism	Total N
Heterogeneous*—farm:†				
High education	40	15	24	25
Low education	0	2	6	18
Homogeneous—farm:				
High education	49	45	42	97
Low education	20	5	16	31
Heterogeneous—nonfarm:				
High education	37	72	26	154
Low education	0	6	11	88
Homogeneous—nonfarm:				
High education	65	60	53	47
Low education	0	4	21	33

* Residential site.
† Workplace

It is, of course, true that any classification or categorization of data destroys something—if only the rawness of the data. All the variables used in this analysis could have been presented in three or more categories. However, if this had been done, we would be back to trying to understand a very complex percentage table with many small cells, and the more powerful Coleman procedure would have had to be abandoned. It was decided to dichotomize all the variables and trade the loss of detail for more powerful analytic techniques. Dichotomization is a conservative adaptation in the case of these data. It does not mask any peculiarities in the relationships but tends to show them as less powerful than they would appear with more categories of each variable.

Table 1 is a total percentage table for Assimilationism and the independent variables. Table 2 is a total table for Ingroup Choice and the

independent variables. Table 3 presents data for the analysis of dichotomous attributes.

ANALYSIS OF DATA

Occupational Status

When education, workplace, and residential site are controlled, occupational status explains a little over 5 percent of the variation in Assimilationism. This general finding is somewhat misleading, however, because there is a fairly marked relationship between high occupational status and high Assimilationism among the highly educated. Among the less educated, however, high or low occupational status is unrelated to Assimilationism.

Occupational status explains only a little over 3 percent of the variation in Ingroup Choice, but again the relationship is one in which high occupa-

TABLE 2

FOUR VARIABLES ON INGROUP CHOICE

	High Occupational Status		Low Occupational Status	
	% Low Ingroup Choice	Total N	% Low Ingroup Choice	Total N
Heterogeneous*—farm:†				
High education......	35	23	27	15
Low education .	0	2	12	17
Homogeneous—farm:				
High education.	20	46	19	99
Low education. .	40	5	7	28
Heterogeneous—nonfarm:				
High education .	54	72	40	52
Low education... ...	0	6	13	83
Homogeneous—nonfarm:				
High education. . . .	35	60	15	47
Low education . .	20	5	18	33

* Residential site

† Workplace.

TABLE 3

EFFECTS OF FOUR VARIABLES ON ASSIMILATIONISM AND INGROUP CHOICE

Variable	Effect on Assimilationism	Z	Effect on Ingroup Choice	Z
Occupational status...........	.054	2 39	033	1.29
Workplace	058	1 62	058	1.67
Residential site ...	181	5 03	098	2.88
Education................	.329	8.73	.254	8.93
% of variation explained .	62 314	.	44 392	...

tional status is associated with low Ingroup Choice among the highly educated; among the less educated there is no relationship between occupational status and having primary relations outside the group.

Generally, occupational status is a variable which operates only in the presence of high education but explains more than a negligible amount of the variation in the two dependent variables.

Workplace

Nonfarm labor explains 6 percent of the variation in both Assimilationism and Ingroup Choice with the other variables controlled. Workplace is not a powerful predictor of Assimilationism but seems strongest among respondents with high education living in ethnically homogeneous areas—nonfarm labor being associated with high Assimilationism when the other variables are controlled. Workplace predicts Ingroup Choice best among the highly educated—nonfarm labor being associated with low Ingroup Choice.

Residential Site

With the other variables controlled, residential site explains 18 percent of the variation in Assimilationism and 10 percent of the variation in Ingroup Choice. Living in an ethnically homogeneous area is associated with Assimilationist attitudes, and living in an ethnically heterogeneous area is associated with having non-Assimilationist attitudes. The relationship is most pronounced among the respondents with high education. There is nothing in previous literature on ethnic communities which would lead one to expect this; yet residential site explains a substantial amount of the variation in Assimilationism. The "city as melting pot" is a theory as old as interethnic contact and implies that cultural breakdown occurs in interethnic or cross-cultural contact. These data suggest the opposite, or at least suggest that the process is not as simple as it has been presumed to be. An explanation for this finding which suggests itself immediately is that in a homogeneous community little or no anti-Ukrainian prejudice is encountered and ethnic identity is something of which one can make light. In a heterogeneous community one is faced by other ethnic groups, encounters prejudice, and consequently must take ethnic identity much more seriously. A partial test of the proposition that encountering prejudice leads to non-Assimilationism was inconclusive. Despite the failure of this test, one is strongly tempted to see this relationship in cognitive dissonance terms.

This finding also bears a resemblance to something which anthropological students of the diffusion of culture have observed; the purest case of a culture type usually appears at some distance from the center of the culture area. Day (1968) observes, for example, that Catholic fertility is higher in countries in which Catholics are a minority than in countries in which they

are a majority. He concludes that the pronatalism of the church increases natality only in situations in which Catholics define themselves as a numerically and politically important *minority* of the population. Something like esprit de corps is involved. The temptation to apply this kind of model to my finding is strong for two reasons. First, we are dealing with a culture of Canada, not a culture of the Ukraine. Second, the center of this culture is in the small towns on the edge of the bush where the first immigrants settled. Canadian-Ukrainian culture has diffused from the small towns to the city rather than the other way around as has typically been the case in America. The respondents who live in heterogeneous areas must define themselves as a significant minority but a minority nevertheless.

Residential site explains 10 percent of the variation in Ingroup Choice. Respondents living in ethnically heterogeneous areas are more likely to have low Ingroup Choice, as one would expect. The effects of homogeneity and heterogeneity of residential site on the two measures of group cohesion are in the opposite direction. Thus, although cultural breakdown seems to be inhibited by residence in an ethnically heterogeneous area, structural breakdown is facilitated. The two are obviously independent in some important respects.

Education

With other variables controlled, education explains 33 percent of the variation in Assimilationism and 25 percent of the variation in Ingroup Choice. The relationship is entirely consistent and strongly positive under all conditions. The single variable, then, which best predicts both dependent variables is formal education. Whereas occupational status and workplace are weak and residential site is moderate, education is strongly related to the dependent variables. This is altogether consistent with the findings by many other sources that higher formal education is associated with lower prejudice, chauvinism, and tendency to stereotype. We would be inclined to speculate that what education does in this case is to tear people loose from an ethnic culture rather than to indoctrinate them in some mass culture. As previously cited (Vallee, Schwartz, and Darknell 1957), there does not seem to be a mass culture to which they might become assimilated.

SUMMARY

Gordon (1964) suggests that there are two general types of processes in which the boundaries of ethnic groups break down—one cultural, one structural. Literatures on large and small groups also tend to be concerned with only two main types of cohesion, although semantic problems sometimes obscure this. This analysis has been concerned with explaining variation in two measures of ethnic group cohesion which conform to the two general models of group cohesion.

The general model suggested by the literature on ethnic cohesion consists of a large number of variables related to the differentiation of the ethnic community and contributing independently to a total effect. My findings do not lend support to this model. Rather, I find a small number of variables related to high Assimilationism and low Ingroup Choice, and only two of these are powerful. I would like to emphasize two main points: (1) the single, most powerful predictor of both measures of cohesion is formal education, which alone accounts for 25 percent of the variation in Ingroup Choice and 33 percent of the variation in Assimilationism; (2) it is among the more highly educated that the other variables are most important. Among the less educated respondents, the effects of workplace, occupational status, and residential site are much muted. The model which these data suggest, then, is a sequential one. Education is a variable which prepares a community for the other effects of social differentiation—it is apparently a necessary precondition for the operation of other variables.[8] Only in the presence of higher formal education do other aspects of social differentiation lead to decreasing ethnic loyalties and involvement. The obvious implication of this is that, at least for this group, increasing affluence will not, by itself, lead to the destruction of the Ukrainian community but increasing education eventually will. However, there is a countertendency which must be noted. The second most important source of Assimilationist attitudes in this population is residence in an ethnically homogeneous community, which, essentially, means isolation from other cultural groups. This isolation is based upon the original settlement patterns of the group in question and is breaking down. Residence in an ethnically heterogeneous community will characterize a greater percentage of this population in the future, and residence in such a community seems to induce non-Assimilationism, although it also induces low Ingroup Choice. These two processes, education and deisolation, seem to pull in opposite directions. The net result will probably be a slow rate of defection from Ukrainian culture and social organization, but at a slower rate than one would expect from simply looking at the relationship between formal education and Assimilationism. There seems to be, therefore, a high probability of an economically diversified ethnic community which maintains considerable cohesiveness in both senses and which will be worn down only very slowly.

In general, this research suggests that the theory of ethnic-group loss of cohesion which develops from the older literature is in part mistaken. It is not simply social differentiation manifested in a number of ways, acting independently and contributing to a total effect, but one powerful variable

[8] In contrast with my findings, nationalist sentiment seems to have been strongest among the intelligentsia in European nationalist movements of the eighteenth and nineteenth centuries (see Snyder 1964 for bibliography). It may be that education acts in the same way but in the opposite ideological direction when nationalism is vigorously on the wax.

which makes possible the operation of others. A number of possibilities for further testing of this proposition exist in the countries which still have large, important, and unassimilated immigrant ethnic minority communities.

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The Structure of Sibling Relationships[1]

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The separation of men's work from a family setting brings about greater female involvement in ties with relatives. Two specific hypotheses about sibling relationships developed from this laterality hypothesis were tested with data from an urban Finnish sample. The findings were interpreted as indicating the existence of a strong brother-brother tie among children of farmers combined with a sister-dominated communication pattern of the kind typical of sibling relationships in an urban industrial society. In an investigation of the residential dispersion of siblings, a type of migration pattern was inferred to promote the residential proximity of siblings and thereby to preserve sibling ties.

Two fundamental dimensions of kinship structure in any society are the relative strength of different relationships, and the extent to which kin are clustered or dispersed. The regularities observable in these two areas may be either normative or behavioral.[2] Norms define the rights and obligations of positions, predate any given holders of these positions, and are known to the actors and to the generality of others. Behavioral regularities, on the other hand, are created by the actors, who are not aware of them as they are aware of norms. One knows what obligations there are to "parents," but only how he interacts with his own particular parents.

The kinship norms of urban industrial societies are well known. Of the simple, bilateral type, the strongest rights and obligations lie within the nuclear family; between adults other than spouses there is only a general obligation to be helpful and keep in touch, and no residential proximity of kin is prescribed. Such norms allow considerable variability in behavior, and it is with behavioral regularities in sibling interaction and in residential location that this study is concerned. These will be seen to differ from, though they do not contradict, the kinship norms. A hypothesis concerning a cause

[1] Revision of part of a paper entitled "Occupational Mobility and Communication among Primary Relatives," presented at the annual meeting of the American Sociological Association, San Francisco, September 3, 1969. This study is part of a project supported by the National Science Foundation entitled "Family Interaction and Ecology." Collection of the data was made possible by the cooperation of Professor Erik Allardt, director of the Institute of Sociology of the University of Helsinki. I am also obliged to Professor Frank L. Sweetser for the benefit of his knowledge of Finnish demography and ecology.

[2] The distinction has been made a number of times; for example Nadel (1957) distinguished "behavior" and "rules." Mitchell (1963) has pointed out the confusion resulting when field workers overlook the difference between two forms of kin ties present in all societies: organized kin groups, and Ego's actual relations with his kin.

of unilaterality in sibling interaction is tested. Evidence is reported indicating that, under certain circumstances, migration produces a surprising amount of residential proximity of siblings. The data were obtained in Finland, which is viewed as a member of the class of urban industrial societies, and not with reference to unique characteristics of Finland.

THE LATERALITY HYPOTHESIS

The separation of men's work from a family setting which is generally characteristic of urban industrial societies gives predominance to female ties with kin; the balance will be found shifted toward male ties when there is a familial economic enterprise, for example, the stem family farm of Finland and some other European countries. Underlying this general hypothesis is the idea that ties of sentiment are strongly influenced by instrumental relations.

This causal hypothesis, which states a reason for matrilaterality or patrilaterality in kin behavior, appears established for intergenerational relations, on the basis of available evidence from six different societies (Sweetser 1963, 1964*a*, 1964*b*, 1966), plus a special study designed to test the hypothesis using a Finnish urban sample.[3] These various sources indicated more frequent contacts and exchanges of help between couples and wife's parents rather than husband's, when men's work was not located in a family setting, together with stronger ties on the husband's side when the family was also an economic production unit.

In the Finnish urban sample of married couples (Sweetser 1968), evidence was noted that the more removed a couple was from a farm background, the more the ties of the couple with wife's parents predominated over ties with husband's parents. This observed relationship can be interpreted as a manifestation of sentiments created on the farm by the shared tasks and interests of fathers and sons, supported by the custom of patrilineal transmission of farms, and persisting from the farming past into the city present for a generation before dying away. Women's work is always located (part of it at least) in a family setting; so is men's work on a family farm. People who have done the same kind of work have more to talk about. Women always have this bond with kin of their own sex; so do the men of farm families.

From the laterality hypothesis, deductions regarding ties between siblings can be made which parallel the predictions regarding parents. That is, among children of nonfarmers, ties involving sisters should be stronger than

[3] The terms "matrilaterality" and "patrilaterality" should be taken to mean "female-linked unilaterality" and "male-linked unilaterality." The Latin is inexact, but these terms seem clearer than any other compound words that might be devised. Other contributing influences on matrilaterality are reviewed in Sweetser 1968, p. 238. Poggie and Pelto (1969) have posed an interesting distinction between "gynocentricity" and "matrilaterality."

those involving brothers, while among children of farmers, ties involving brothers should show relatively greater strength. These hypotheses were tested by means of an analysis of variance procedure applied to sibling relationships classified by sex: brother-brother, brother-sister, and sister-sister. In their original formulation, the hypotheses do not completely specify the shape and geometric orientation of the trend of the interaction measurement across sibling categories in the two levels of father's occupation; that is, several trend lines would be compatible with each hypothesis, although more would not. The statistical procedure applied to the data was used both to test for the existence of an effect compatible with the hypotheses and to identify the shape of the effect.

Previous research on relations of adult siblings in urban industrial societies is both scarce (Irish 1964; Adams 1968) and confined to samples where men's work was separated from the family. The few studies available which differentiate siblings by sex have reported stronger female ties. This was noted in a sample of older adults in Kansas City (Cumming and Schneider 1961, pp. 501, 506), a middle-class Boston sample (Reiss 1962, p. 334), inhabitants of a working-class area in London (Young and Willmott 1962, p. 77), residents of a London suburb (Willmott and Young 1960, p. 177), a sample of white married residents of Greensboro, North Carolina (Adams 1968, p. 103), and in an urban sample of French Canadians (Garigue 1956, pp. 1092–93).

SAMPLE AND MEASUREMENTS

Data were obtained during interviews in March 1966 with both husbands and wives in a probability sample of 200 married couples in Helsinki, Finland.[4] Included were questions about various kinds of contacts with relatives. A communication scale was constructed from three items: whether or not the respondent reported that he and the sibling visited each other without special invitation, whether they had seen and talked with each other in the last month, and whether they had talked on the telephone in the last month. Scores could range from 0 to 3, according to the number of positive items. Only adult siblings, meaning those eighteen years of age or older, were included.

These items were selected for the scale because they had a strong unidimensional component underlying them, and because they pertained to an aspect of interaction which is not a priori a sex-specialized task, as are such things as baby-sitting. The scale was a good indicator of interaction in general; a linear relationship was present between the communication scale and the presence or absence of task-specific contacts. Ninety-two percent of respondent-sibling relationships with a zero score on communication were

[4] Details on the sampling procedure, the match of sample and population, and the interviewing are given in Sweetser (1968).

marked by the absence of any affirmative answers to other contact items, and this figure declined to 49 percent in relationships with a score of 3 on communication.

The interviews thus provided measures of reported communication between husband or wife and each brother or sister. As the hypotheses refer to sibling relationships defined by sex, the respondent-sibling scores were reclassified. The husband-brother scores were taken to represent brother-brother communication, the wife-sister scores as representing sister-sister communication; and the husband-sister and wife-brother scores were grouped together as brother-sister communication. If husband and wife differed in how they reported communication with siblings—if, for example, wives had a better recall of contacts with relatives—the communication scores would be biased. Comparison of the husband-sister and wife-brother scores provided a test for such bias, since these scores are two versions of the same relationship, that of cross-sex siblings. The two types of scores were compared using an analysis of variance procedure and were found not to differ significantly. Consequently, it was concluded that there was no evidence of bias attributable to sex of the respondent, and also no obstacle to combining the two sets of cross-sex scores into one category.

In order to make possible a test of the effect of another variable, social distance, on sibling communication, occupations were scored using Rauhala's 9-point prestige scale, which is very highly correlated ($r = .92$) with the North-Hatt scale and with a similar set of ratings obtained in Denmark (Rauhala 1966, p. 430). Farmers can be placed on the scale, provided the amount of land cultivated is known. As this information, although obtained for parents, was not obtained for siblings, 92 farmer siblings, out of a total of 996 adult siblings of husband or wife, were not assigned an occupational prestige score and were therefore omitted from the analysis of social distance and communication.

SIBLING COMMUNICATION

As the first step in testing the hypotheses concerning sex of siblings and father's occupation, the data were cast into a three-way factorial design, with two levels of father's occupation, three levels of sex of sibling, and two levels of location. Location was defined by whether the respondent's sibling lived in greater Helsinki or elsewhere in Finland. This control of location removes the effect to be expected on the communication scores of residence in the same metropolitan area, with local transportation and telephone service, or outside of it. Each cell of the twelve-cell table contained a mean value of communication, which was treated as a single observation typical of the behavior in the sibling relationship under the specified conditions.

The three-way factorial design made it possible to ascertain whether

there were any significant first-order interactions among the main effects. The absence of such interactions would allow subsequent analysis to be based on a two-way factorial layout. As can be seen in table 1, no significant interactions were observed.

The significant effect of location evident in table 1 is irrelevant to the hypotheses, since no interaction effects of location were present. The lack of a significant effect of father's occupation on the dependent variable, while

TABLE 1

COMMUNICATION MEANS OF SIBLING PAIRS, BY SEX OF SIBLINGS, FATHER'S OCCUPATION, AND LOCATION: DATA AND PRELIMINARY ANALYSIS OF VARIANCE (MEANS TREATED AS SINGLE OBSERVATIONS)

A.

Proximity	Father's Occupation	Brother-Brother		Brother-Sister		Sister-Sister	
		$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
In greater Helsinki...	Nonfarmer	1.85	94	1.82	164	2.32	110
	Farmer	2 05	19	1 94	33	2.31	26
Elsewhere in Finland	Nonfarmer	0 81	89	0 97	156	1 18	77
	Farmer	0 92	48	0.74	115	1 02	65

B.

Source of Variation	Dev. Sq.	df	MS	F	p
Location (L)..........	3.6852	1	3.6852	801.13	<.01
Father's occupation (F)	0 0001	1	0 0001	<1.0	N.S.
Sex of siblings (S) . ..	0 2763	2	0 1382	30 04	< 05
L×F.	0 0290	1	0.0290	6.30	N.S.
L×S . . .	0 0189	2	0 0095	2 07	N.S.
F×S....	0 0342	2	0 0171	3 72	N.S.
L×F×S	0 0092	2	0 0046		.

it simplified subsequent analysis, is also irrelevant; the hypotheses would be unaffected by whether or not children of nonfarmers differed as a whole from children of farmers in how much they communicated. The significant effect of sex of siblings on communication indicated the importance of this variable; the next step was to investigate its effect within categories of father's occupation.

It is possible to divide the variability of communication into an amount attributable to sex of sibling within the level of nonfarmer fathers and to carry out the same operation within the level of farmer fathers. Furthermore, since sex of sibling is a quantitative factor, each level can be given a score of 0, 1, or 2 representing the number of females (or the number of males) in the sibling pair. This quantitative scoring of sex of sibling then

makes it possible to ascertain the trend, or shape of the line, of the dependent variable across the sex-of-sibling factor. Since sex of sibling has three values, a trend, if present, must be either linear or quadratic, either a straight line or a line with one curve. Since there were only three values of the quantitative factor, the quadratic component can also be thought of as the nonlinear residual, since the deviation sums of squares of the linear and

TABLE 2

VARIABILITY OF COMMUNICATION IN RELATION TO SEX OF SIBLING AND FATHER'S OCCUPATION: CELL MEANS AND ANALYSIS OF VARIANCE WITH TESTS FOR TRENDS

A.

	Brother-Brother		Brother-Sister		Sister-Sister	
Father's Occupation	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
Nonfarmer	1 34	183	1 41	320	1 85	187
Farmer	1 24	67	1 01	148	1.38	91

B.

Source of variation	Dev. Sq	df	MS	F	p
Father's occupation (F)	0 1580	1	0 1580	19.27	<.01
Sex of siblings (S)	0 1872	2	0 0936	11 41	<.01
F×S	0 0370	2	0 0185	2.26	N.S.
Sex of siblings, nonfarmer father:					
Linear component	0 1280	1	0 1280	15.61	< 01
Quadratic component	0 0235	1	0 0235	2 87	N.S.
Sex of siblings, farmer father:					
Linear component	0 0106	1	0 0106	1 29	N.S.
Quadratic component	0 0620	1	0.0620	7.56	<.01
Subtotal[a]	0 2241				.
Within cells (error term)	1,044 2016	990	0 0082[b]	...	.

[a] Should equal sum of dev. sq. for S + F × S; discrepancy is due to rounding error.
[b] Further divided by harmonic mean of cell frequencies.

quadratic components must equal the deviation sum of squares which is being divided.

Table 2 shows the results of this next step in the analysis. It presents the results of a two-way analysis of variance, with father's occupation and sex of sibling as the main effects, together with the cell means and tests for the trend of the dependent variable in relation to sex of sibling at each level of father's occupation. The problem of unequal cell frequencies was dealt with by dividing the error mean square by the harmonic mean of the cell frequencies (Snedecor and Cochran 1967, pp. 475–76).

Among children of nonfarmers, the effect of sex of sibling on communication is linear, as indicated by the significant F-ratio for the linear component. Among children of farmers, the significant effect of sex of sibling on communication is curvilinear. The trend of the scores for sister-sister and brother-sister communication differs very little across father's occupation; the two trend lines diverge at the brother-brother scores.

As a further check on whether these findings held regardless of location, an additional two-way analysis of variance was calculated for each level of father's occupation, with location and sex of siblings as the main effects. The same results were obtained as those shown in table 2; the linear trend of communication among children of nonfarmers and the curvilinear trend among children of farmers recurred, and there was no significant interaction of the main effects.

The hypotheses as first formulated were that among children of nonfarmers, ties involving sisters should be stronger than those involving brothers, while ties involving brothers should show relatively greater strength among children of farmers. As previously noted, more than one trend in the data would be compatible with each hypothesis. It is now possible to say that trends of the predicted kind were observed in the data and also to describe them. Among children of nonfarmers, sisters communicate more than brothers, and the effect is cumulative, so that communication is at a high between sisters, intermediate between sister and brother, and lowest between brothers. Among children of farmers, the communication between brothers is contrastingly high, while the communication of sister and brother, and of sister and sister, resembles that of children of nonfarmers.[5] These findings are interpreted as due to a strong brother-brother tie among children of farmers combined with a sister-dominated communication pattern of the kind typical of sibling relations in urban industrial societies.

Some alternative explanations of these findings remain to be considered. The quadratic trend of communication among children of farmers may be due to something in their present environment, not their past, such as perhaps their social class membership, which promotes the segregation of communication by sex, even among siblings. In other words, the quadratic component might be due to a general preference for same sex over cross-sex communication. Some evidence against this is provided by communication with parents, which was greater between sons and parents than between daughters and parents among children of farmers, while the opposite was

[5] The shape formed by the communication scores above a surface defined by father's occupation and by sex of sibling can be visualized as a flat, tilted plane with an upward warp at the brother-brother, farmer father corner. The same shape is observable in the data for each level of location, which are given in table 1.

true among children of nonfarmers.[6] This intergenerational difference cannot be attributed to segregation of communication by sex, and it conforms to the general idea that a farm background produces stronger ties between men and their relatives.

In order to examine the effect of marital status of the siblings on communication, the means shown in table 1 were recomputed with the marital status of the sibling controlled. A very similar pattern of differences in means emerged. The same pattern was also observed when an analysis was made of those families where the mother was alive. It was concluded, therefore, that the findings were unaffected by the marital status of the sibling and by any influence on communication which might conceivably result from the mother serving as a communication relay point for the siblings.

Another possible influence on sibling ties—social distance—proved to be unrelated to communication. Social distance between respondents and nonfarming siblings was measured as distance between the occupational levels of men, or of the husbands of women. Eight correlation coefficients for social distance and communication were calculated, for the eight subdivisions of cases by sex of respondent, sex of sibling, and location of sibling. Only one was significant, and most were close to zero. It appears, therefore, that the differences in values and interests, or the sense of being at higher or lower levels, which might be supposed to accompany differences in occupational prestige levels are not sufficiently great here to have a noticeable impact on sibling ties. This may be because the differences in occupational prestige were usually, and doubtless typically, not very great. The mean and standard deviation of occupational differences between respondent and sibling were 1.12 and 1.0, respectively. A difference of one point on Rauhala's 9-point occupational prestige scale is, for example, the difference between a telephone operator and a bus driver, or between an architect and a sea captain.

RESIDENTIAL PROXIMITY

The location of siblings has thus far been treated as a variable to be controlled because of its strong, though unsurprising, effect on communication. Because of this effect on communication and on other aspects of kin ties such as exchanges of help, nearness can be said to promote closeness. Thus, residential proximity was said earlier to be a fundamental dimension in kinship structure. Accordingly, it is of interest to inquire how prevalent was residential proximity in this sample of Helsinki residents and their siblings, and what factors might have brought it about. First, there was a surprising

[6] Details are not given here, since the intergenerational data have already been fully reported (Sweetser 1968). However, in that report, the unit of analysis was the couple, and different measures of interaction were used. For the comparison reported above, the communication scale used in this paper was applied to the intergenerational data.

amount of proximity of adult siblings; for an adult sibling to live near another adult sibling was the rule rather than the exception. Second, the amount of proximity observed in this sample appeared to be due in large part to the heavy current of migration in Finland southward to Helsinki.

The analysis of residential clustering in sibling sets was confined to sets with at least two members and to adult siblings, defined as those eighteen years of age or older. Individuals living abroad were excluded, as were a few others for whom certain information was missing. A "sibling set" includes the respondent husband or wife. There were 328 sets containing 1,331 individuals.

Of these 1,331 individuals, only 385 (29 percent) were geographic isolates; the rest were living in the same local area as at least one other sibling.[7] The 328 sets contained 322 clusters, or subsets of two or more living in the same local area. Not only were there few isolates and many clusters, but also only 96 sets lacked a "principal location." A set was considered to have a principal location if at least half the members (both, in sets of two) were living in the same local area.

The amount of clustering in the sample, indicated by the minority of isolates, the number of clusters, and the high proportion of sets which had a principal location, was largely the product of the one-way migration current previously noted. Helsinki-born individuals tend to remain there, and migrants to Helsinki are likely to be joined by siblings.

In the 86 sibling sets which originated in greater Helsinki, most of the respondents' brothers and sisters (84 percent) were also living in greater Helsinki at the time of the study.[8] Only ten of the eighty-six Helsinki-born respondents were isolates. These eighty-six sets contained seventy-eight clusters, all but two in greater Helsinki; seventy-seven sets had a principal location—Helsinki, in all but one instance. Thus, sibling sets originating in Helsinki displayed a marked amount of clustering, on the basis of all three indicators. This is doubtless a manifestation of the fact that Helsinki is, as previously noted, an area with little out-migration.

In the sibling sets originating elsewhere in Finland, a notable amount of clustering was also observed. This appeared to be due to the other aspect of the one-way migration current in Finland, namely that Helsinki is an area of heavy in-migration. In the 242 sets originating elsewhere in Finland, the respondents had been joined in greater Helsinki by 35 percent of their

[7] A "local area" is either a commune, the Finnish unit of local government, or greater Helsinki. The latter consists of the commune of Helsinki plus four contiguous suburban communes: Kauniainen, Kerava, Espoo, and Helsingin *maalaiskunta*.

[8] A set was assumed to have originated in the commune where the respondent reported he had spent most of the first fourteen years of his life. Besides the eighty-six sets which originated in greater Helsinki, thirty-four sets originated in the province where Helsinki is located, 101 in the four nearest provinces, and 107 in the other, more northerly provinces.

brothers and sisters. Only ninety-six (40 percent) of these respondents were isolates. To look at the data on individuals in these sets in another way, the probability that an individual would be an isolate was much greater if he were not living in greater Helsinki than if he were; half the individuals from these sets who were not presently living in greater Helsinki were isolates, while less than one-fifth of the individuals who were presently living in greater Helsinki were isolates. These 242 sets contained 244 clusters, 146 of which were located in Helsinki. Of these sets, 155 had a principal location; in 109 instances, the principal location was greater Helsinki.

Thus, in the sibling sets of Helsinki residents, the one-way migration current to Helsinki promotes the residential proximity of siblings, both in sets originating in Helsinki and in sets originating elsewhere. Since residential proximity facilitates interaction, this kind of migration current can be said to operate to preserve sibling ties through promoting proximity and thereby facilitating interaction. As the existence of a pronounced, one-way current of migration is by no means unique to Finland, it can be suggested that in such cases migration, far from weakening kin ties by dispersion as it may do in other instances, operates to preserve them.[9]

DISCUSSION

In summary, two fundamental dimensions of kinship structure, the strength of various relationships and the extent to which relatives are clustered or dispersed, have been studied by means of data on siblings of an urban Finnish sample. These sibling relationships conform to a unilateral behavioral model of kinship structure in urban industrial societies, previously tested also for intergenerational relations. Females predominate, provided that men's work is separate from a family setting. These conclusions are based on the observation that, among children of nonfarmers, sisters communicated more than brothers, and the effect was additive, so that the trend of communication across categories of sibling relations defined by sex was linear, while among children of farmers the brother-brother communication was sufficiently great to produce a curvilinear relation between sex of siblings and communication. In the investigation of residential proximity of

[9] Bultena (1969) reported a similar influence of migration on frequency of parent-child contacts in a Wisconsin sample. More of the children of rural aged than of urban aged had moved away from home; consequently the urban aged saw more of their children. An additional question of interest about migration in the Finnish sample is the extent to which it is age- and sex-based migration, or kin-influenced migration. That is, were siblings brought to the same place by factors promoting migration of persons of a given age and sex, some of whom might coincidentally be siblings, or did the migration of one member of a set promote the migration of others to the same place? Evidence available from this sample indicated little if any influence of kin on migration. Respondents who were migrants and who had relatives in Helsinki were asked if these relatives had helped them in various ways in getting settled; the help reported did not seem likely to have been very influential in the decision to migrate.

siblings, a paradoxical effect of migration was noted; a type of migration pattern was inferred to preserve sibling ties by promoting the residential proximity of siblings.

Two issues related to these findings remain to be discussed. These have to do with different ways to measure kin ties, and the fit between the concept of kinship structure and the life experiences of a sample of persons.

Measurement of the strength of relationships by frequency of communication does not exhaust the substantive meanings implied by the term. Measurement by frequency of contacts focuses on the daily round. One alternative of interest would be how often there was no contact with, or no knowledge about, a type of relative. Another would be to base a measurement of kin ties on behavior involving important events or crises, to ask about communication and exchanges of help on such occasions. If this approach were used, and if the research hypothesis concerned laterality, it would be important to avoid utilizing indicators of behavior which pertained to sex-specialized tasks. Otherwise the measurement would bias the findings.

As to the fit between kinship structure and the experiences and situation in life of a sample of persons, the structure is highly abstract. For example, it attributes no systematic influence on communication to the life-cycle stage of the family or to contextual variables, such as the number of brothers and sisters of an individual respondent. As usual, replication is the best test of whether omitted variables have contributed to associations observed in a given sample. In this connection, it can be said that a key idea in the model of structure presented here, namely, that whether men's work has a family setting determines which sex is more active in ties with relatives, is on the whole supported by other studies which have reported data relevant to this topic.

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High School Effects on College Intentions[1]

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In order to extend sociological thinking about socialization in secondary schools, I have tested the contention that the social status of a high school independently affects the college-going intentions of its students, using data from a 1955 sample of students in 518 American high schools. The effect, although weak, is found to be more an effect of the social-status composition than of formal organization of the school. The positive effects of school status are found to mask a negative effect; in schools with students of higher average ability, students of any given ability and status are less likely to have college intentions, presumably because standards of competition rise within the school. When this hidden negative effect is held constant, the positive effect of school status on college intention increases.

This paper considers some of the complicated ways in which high schools may socialize students with respect to their decisions to attend college. This is only one of the many socializing effects of high schools; a school may also affect the values, abilities, and information possessed by students—and may affect each in different ways. Since American public high schools do not vary greatly in their effects upon college intentions, knowledge about the high school adds little to our ability to predict whether students will plan to enter college. But our aim is to study how high schools affect students by analyzing the small effect which can be found in this important area.

In earlier sociological discussions of the problem, the essential generalization has been that the social status and/or community resources of a high school have only a slight effect upon a student's decision to attend college—independent of the characteristics of himself and of his family. We contend that there is within this slight effect both a larger positive and a negative effect upon individual students. Schools with higher status are more likely to foster college attendance, but they are also more likely to foster the student's doubts about his ability to do academic work.

THE EFFECTS OF FAMILY STATUS, INDIVIDUAL APTITUDE, AND SCHOOL STATUS

Sociological discussions of the decision to attend college have distinguished as explanatory variables (*a*) resources the individual has within the educa-

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tional system—typically some measure of individual mental ability, such as IQ; and (*b*) his resources in other social institutions, as measured by family social or economic status and by associated expectations. While these two classes of variables are closely related, each has a large independent effect on the decision to attend college. (See the reviews by Sewell, Haller, and Straus 1957; Sewell and Shah 1968.)

Recently, a number of studies have explored the hypothesis that the social status of the high school (or of its community) influences prospective or actual attendance in addition to the familiar effects of mental ability and family status (see Wilson 1959; Michael 1961; Turner 1964; Campbell and Alexander 1965; Boyle 1966*a*; Sewell and Armer 1966; and McDill, Rigsby, and Meyers 1969).[2]

There is agreement that the contextual effects of the school are smaller than those attributable to individual ability and to family status, at least in the United States.[3] Sewell and Armer (1966) argue that this contextual effect—although they do find it—is small and relatively uninteresting.[4] Presumably their interests were primarily in improving predictability of individual decisions to attend college, and they found that family and individual characteristics were distinctly most useful for that purpose.

The contextual effect, however, is of great interest from the perspective of exploring and explaining the effects of the social organization of a school upon pupils. Even minor effects may be central to an analysis of educational organizations. While American secondary schools may not vary enough in essential pedagogical features to cause, independently, large differences in rates of college attendance, we must explore even small effects if we want to understand how schools work. Such studies may help show how socializing organizations affect their members.[5]

In the present study, we worked with a sample of 35,330 high school seniors in a reasonably representative sample of 518 American public high schools. In a study by the Educational Testing Service in 1955,[6] information on the social background and college intentions of each senior was obtained

[2] Wallin and Waldo (1964) find no such effect in a study of eighth-grade students, however.

[3] Actually, it is not possible to specify precisely the relative effects of school and individual characteristics until all the relevant characteristics at each level have been considered, and their interrelationships defined.

[4] This argument became the object of considerable controversy on both substantive and technical grounds (see Turner 1966; Michael 1966; Boyle 1966*b*; Sewell 1966; Smith 1969).

[5] They may also help to relate American findings to comparable studies in other societies. For example, Himmelweit and Wright (1967) find massive variations among British schools (and tracks) in the later attainments of similar students.

[6] These data were originally reported by the Educational Testing Service (1957), and have been extensively analyzed by Michael (1961), Ramsøy (1961), and especially in a major unpublished study by Ramsøy (1963).

from a short questionnaire;[7] mental ability was obtained from a twenty-item aptitude test constructed for the purpose; and information on the schools was obtained from a questionnaire to principals and from information on individual seniors. With these data, we can compute the partial correlations of family status, mental aptitude, and school status with the college intentions of the students; in each case with the other variables held constant.[8] Family social status is measured with an index of occupational and educational information about the family, collapsed into quintiles. The index of school status is the proportion of seniors in the school who fell into the highest two quintiles on family status. When this is done, our data are congruent with other findings reported in the literature we have been reviewing.[9] Mental ability shows a partial correlation of .23 with college intentions, and for family status .19, but school status is only slightly related to college intentions (r = .05). Later we will argue that the small size of this coefficient is misleading.

We go on to add additional school characteristics to our analysis, showing how they illuminate seniors' decisions to attend college. We could do this at the school level by attaching to each school a college-intentions rate that was standardized in terms of its students' social status and mental ability. We do not analyze the data this way because it would attribute all the joint (or overlapping) effects of school and individual status to the latter variable, thus underestimating school effects.[10]

ANALYSIS OF THE EFFECTS OF HIGH SCHOOL CONTEXTS: ORGANIZATION OR PEERS

Whatever the social-psychological processes through which high school contexts operate, two main structural mechanisms are distinguished by

[7] For this analysis, any report by a student that he intended to do any college work—full or part-time, day or evening—was counted as a college intention. This rather loose definition of a college intention resulted in the classification of about 50 percent of the students as having college plans. There was a close association between college intentions and actual attendance the following year, and the results of the present analysis of intentions probably apply to actual attendance too.

[8] Partial correlations were used here to summarize the detailed multivariate cross-tabulations which were examined, but are cumbersome to present. Wherever the effects of one variable seemed to differ systematically with the level of a second, it is explicitly noted.

[9] The table arises from the same data discussed by Michael (1961). We can note in passing that the effect of family status is a little greater in high-status than in low-status schools.

[10] The criticisms of Coleman et al. (1966) and of Sewell and Armer (1966) raise this point. Aside from this defect, however, the two forms of analysis could differ only if our analysis of school effects on individual student college intentions were distorted by unusual results among schools having large numbers of students. Such schools are, of course, weighted more heavily than others in an analysis at the individual level. We have protected against this bias by separating large and small schools in the analysis of the data, and also by repeating the analyses with size explicitly incorporated as a variable, but the results do not differ meaningfully from those reported here.

many writers: (*a*) the high-status school may affect the future intentions of its students through its formal structure—its network of college-oriented teachers, curricula, and guidance counselors; and (*b*) the high-status school may surround each student with a college-oriented climate of values, and particularly it may provide more college-oriented peers who informally present college as attractive, are familiar with admission processes, and so on. (Campbell and Alexander [1965] and McDill, Rigsby, and Meyers [1969] suggest a climate of parental support.) Similarly, Coleman et al. (1966) argue that organizational features of the high school contribute much less than its social class composition to students' mental ability. However, Bowles and Levin (1968) take issue with this conclusion.

We can study the simultaneous effects of the social-status composition of the school and of its organizational quality by comparing two measures of high school characteristics—school social status (the aggregate composition, in terms of family status, of the student body), and school quality (or organizational resources).[11] In all comparisons, of course, individual ability and family status were held constant.

When school social status and school quality are included in the same equation, the school effect turns out to be attributable to school status. It retains its small partial correlation of .05 with college intentions, but school quality has no independent relation (partial correlation of −.01).

Only the informal structure of the school seems to have any effect on college intentions. However, it is still possible that the effect of school status occurs through features of the formal organizational structure which we have not included in our school quality measure. For instance, the formal academic standards of a school may be more affected by the status of its students than by the organizational resources it possesses.

THE NEGATIVE EFFECTS OF HIGH SCHOOL CONTEXT

We have been assuming that the various resources of high-status schools, like those of high-status families, aid youth to move upward in the social hierarchy. The small positive high school effects which are generally found seem to show the process.

But the high school differs from the family in being only partly an

[11] A crude measure of school quality was constructed by combining several items of information about the organizational resources of the school from a principals' questionnaire and by aggregating the answers of the seniors to certain items. A school was given one point on the index for each of the following items: (*a*) a principal's report of an average classroom size below twenty-five students, (*b*) formal accreditation, (*c*) a principal's report of one or more special staff members, (*d*) over one such staff member per fifty students, (*e*) expenditures of $1.00 or more per student on library materials and other nontextbook instructional supplies, and (*f*) the familiarity of at least 56 percent of the seniors with two or more of seven national scholarship programs. Ramsøy (1963) has an extended discussion of the interrelationships of school quality indicators.

ascribed base from which the child moves into a wider competitive society, inasmuch as each school is an arena for achievement—a socially defined unit where competition takes place. The student competes for available rewards primarily with his peers in his own school, not directly with students in other schools.

There are many reasons why this "localism" prevails especially in the United States: (*a*) the long history of local control has inhibited development of a national market for high school graduates, (*b*) the system of higher education is too diverse and decentralized to uphold nationwide admissions standards, (*c*) the task of motivating and controlling a mass population of students leads to an emphasis on restricted and local systems of competitive evaluation and reward—primarily through locally assigned grades, and (*d*) the quality of a school system is assessed less by the quality of its output (its graduates) than by the quality of teachers and their standards (its input).

The most fundamental, continuous, and public definitions of the performance of a high school student (i.e., grades and standing in the courses of the school) are reported on a local base. Thus, the higher the academic worth of the other students in his school, the lower will be the academic worth of any given student; and consequently, the less likely he will desire, or feel encouraged, to go to college.[12] Despite the supportive features of higher-status schools, this negative feature persists.

As a rough measure of the competitive standards of a school, we can use the mean score of its seniors on the aptitude test. This attribute of the school is, of course, closely related to the school's social status ($r = .69$), but there is enough independent variation to separate the effects of these two variables upon college intentions.

Table 1, no. 1, shows what happens to the partial correlations previously reported when the average aptitude score of the pupils in each school is included in the equation. First, the average aptitude of the students does indeed have a negative effect on the college intention of students in a school, holding constant the supportive features of such schools. That is, holding constant the student's family status and his own ability along with the social status of his high school, pupils' ability has a negative correlation (−.11) with college intention. Second, with the removal of the closely related negative effect of average student ability in a school, the positive effect of school social status on college intentions is clearly increased (.05 to .11).[13]

[12] Similar effects on the college level have been studied empirically by Davis (1966) and Werts (1968) and speculated about by Meyer (1965). Davis's title, "The Campus as a Frog Pond," evokes the same point we are making here—that the estimate of a student's ability depends not only on the student, but upon the context too.

[13] We can discover something about the statistical significance of these central findings by referring to the cross-tabulations. The cross-tabulation of family-status quintile, abil-

One reason why the effects of school characteristics are generally found to be small is that, while higher status schools support students more, they also set higher competitive standards of performance.

We are considering only one socializing influence of a high school—on student decisions to attend college. It makes sense to conceive of these decisions as being made in a "scarce market": students are less likely to plan on college as competition increases, as their own ability appears diminished. Not all other outcomes of high school socialization would show parallel negative effects; for example, students with abler peers probably learn more. (McDill et al. [1967] show some slight negative contextual coefficients in a

TABLE 1

PARTIAL CORRELATIONS OF INDIVIDUAL ABILITY, FAMILY STATUS, SCHOOL SOCIAL STATUS, AND SCHOOL AVERAGE ABILITY WITH (1) COLLEGE INTENTIONS[a] AND (2) WITH TWO INDICATORS OF STUDENT SELF-CONCEPTION

	Individual Ability	Family Status	School Social Status	School Average Ability
1. *Effects on college intentions:*				
Partial correlations without school average ability . . .	.23	.19	05	Not included
Partial correlations with school average ability in the equation .	25	19	11	− 11
2. Effects on two indicators of student self-conception:				
Reporting grades in top half of class	.37	.04	−.02	− 11
Omitting lack of competence as potential reason for not attending college .	23	03	02	− 11

[a] Compared with the same data, excluding school average ability.

study of mathematics achievement which could possibly be interpreted along lines discussed here, although the authors themselves suggest an artifactual explanation.) There is little reason to believe that the socialization of students to dominant school values would be negatively affected by the competitive processes noted here. However, if conformity in the acquisition of school values tends to be greater among the more successful people in a

ity quartile, and school-status quintile defines 100 categories of students. In thirty-one of the thirty-eight categories containing cases in both extreme categories on school average ability, the students in the lower school-ability category were more likely to plan on college. In the same tables we can study the school-status effect. Comparisons of the highest and lowest quintiles were possible in only fourteen of the sixty possible comparisons; in all fourteen, the students in the highest school-status quintile were more likely to plan on college.

school, it is likely that a student would reject school values the greater the average ability of his peers.[14]

MEDIATING FACTORS IN THE NEGATIVE EFFECTS OF CONTEXT

A number of different factors might make the student who has more able peers less likely to attend college. In this situation, each person with whom the student interacts—teachers, counselors, parents, and college admissions officers—is perhaps less likely to think of him as "college material." Each of these persons can compare any student with others. Prominent among the cues are course grades, which are greatly affected by the relative competence of the other students (Bloom and Peters 1961). Informal evaluations of the student by teachers, counselors, and peers may be affected too.

A student may also be judged by how hard he has to work to get his grades. A student who has to work very hard to do acceptably may seem to indicate inadequacy as a student. Of course, all of these cues might be affected by a high school's formal quality, standards, or resources, as well as by that factor to which we are calling particular attention—the average ability of the students—a factor that would be especially likely to affect all of them in a systematic way.

We have no detailed evidence about teacher or peer conceptions of students in our sample, but we do have information about students' self-conceptions. The seniors were asked in which quarter of the class their grade average placed them, but their answers showed considerable distortion: 22 percent said they were in the top quarter, 39 percent in the second, 34 percent in the third, and only 5 percent admitted being in the bottom quarter of their class. We use their reports as indicative partly of actual grades and partly of self-definition. In either case, we are assessing a description of the student's academic worth by an important person. If he reports his grades accurately, we have his teachers' descriptions of him; if the student distorts his report, presumably he is doing so in a way which fits his self-conception.

The students were also asked: "If you do *not* go to college, what will the reasons probably be?" They were given a list of fourteen possible answers, for example, "my teachers think I should not go" (checked by 1 percent), "my high school grades are too low" (checked by 20 percent), and "I don't think I have the ability" (checked by 16 percent). We considered a student who gave any one of these three answers as having expressed a lack of academic self-confidence. Such answers were much more common among

[14] To study these ideas, we analyzed students' answers to a question—not about whether they intended to go to college—but whether they would like to do so. It was hoped that this "aspiration" question would tap values as well as intentions, but student answers to it may have been greatly affected by their actual plans. The resulting correlations were surprisingly similar to those presented here (except that both positive and negative ones tended to be somewhat smaller).

students who acknowledged grades in the bottom half of their class (ϕ = .37).

Table 1, no. 2, shows the partial correlations between these two indicators of the student's academic worth and family status, school status, mental ability, and school average ability. With the other variables held constant, does a higher average ability level of a school lower the self-definition of a given student? Individual mental ability, of course, greatly influences a student's description of his academic worth, but family status has little effect (in contrast to the argument of Hollingshead [1949]). School status has practically no independent effect—a powerful indication of the extent to which grades and other criteria of academic success are defined within each school. And finally, the higher the ability of his average peer, the poorer are the grades any given student reports and the less confidence he has in his own ability. (Notice the two negative partial correlations in the last column.)[15]

STRUCTURAL BASES FOR THE NEGATIVE EFFECTS OF CONTEXT[16]

The small negative effects of high school seniors' average ability which we have identified are created by a simple situation, arising from the fact that the reference group with which a high school student compares himself (or is compared with by those around him) is in good part defined by the boundaries of his school.

This system of comparisons could be eliminated hypothetically (although the wisdom of doing so would be very much open to question) in two ways:

1. Students' performances could be compared with national standards, allowing a student or others to conclude whether he is "college material" on the basis of standards more comprehensive than those of a local school Indeed, nationwide testing may already have had some effect, for its prevalence has increased greatly since 1955, when our data were gathered.

Within our data, we do find traces of the development of a "national market" for high school graduates which could minimize the negative comparisons within individual schools. If there is such a market, it should exist most strongly in schools of high social status, for in such schools, students, parents, teachers, and administrators are most attuned to the college market; so the higher the status of the school, the smaller should be the negative effect of average school ability. To see if this is true, the students in our sample were divided roughly into quarters by school status, and a partial correlation was computed within each such category between the average

[15] When the indicators in table 1, no. 2, are included in an equation with college intention as the dependent variable, they reduce, but do not eliminate, the negative effects of school average ability.

[16] Several points raised here follow from Turner's (1960) distinction between systems of "sponsored" and "contest" mobility. These ideas are also related, of course, to the tradition of thinking about "relative deprivation."

ability level of the school and the college intentions of the students. Family social status and individual mental ability were held constant.

The following results were obtained. In the lowest status schools, the partial correlation between average seniors' ability and college intentions is −.17. In the next two categories on school status, the correlation (in both cases) is −.09; but in the highest quarter of schools by status, the partial correlation becomes +.04. Thus the negative effect of average school ability is indeed eliminated, and even reversed, in the highest status schools.[17] While this result could have different sources, we suggest that it occurs because students in these schools become sensitized to their worth in the wider world of college admissions. These findings may reflect a situation which in the future will become general.

2. A second way to eliminate the negative effects of high ability schools would be to retain the local school as the framework within which achievements are compared, but to attach differing evaluations to individual schools. To some extent these evaluations of high schools take place now, but are not public and institutionalized, and therefore are not so likely to have much impact on students' self-esteem.[18]

Established ranking of high schools may be emerging, for many pressures since Sputnik have led to increasing differentiation at the high school level. For example, (1) different curricula or "tracks" are defined (and ranked) by the futures of their students, (2) there has been increased use of nationwide testing, (3) there appears to be increased concern by parents about the education of their children, which leads to more discussion and awareness within a community of the quality of its educational system, and (4) residential segregation by class and race may be producing more high schools which are comparatively homogeneous but disparate on these visible and ranked properties.

We have no data directly relevant to most of these ideas, but the 1955 sample contained a number of segregated southern schools. White and black schools are clearly and publicly ranked vis-à-vis each other. If their students

[17] The higher negative correlation in the lowest status schools is partly artifactual. It results from the inclusion in this category of about 1,000 students from segregated southern black schools. Those schools had low average ability scores but rather high college attendance rates (in segregated colleges) (see Ramsøy 1963).

[18] Distinct institutionalized status levels may characterize, for example, private college-preparatory high schools, and may be the case with British secondary schools and tracks within schools. (Tracking in the United States is probably not general enough or consistent enough in categories and labels to have this effect.) This may account for the strong supportive effects of school status and track which Himmelweit and Wright (1967) found in studying these schools. Bloom and Peters (1961) noted that college admissions officers often evaluate high schools according to their academic standards in order to "correct" for differences in the meaning of a given grade average from school to school. They suggest a set of statistical devices which could evaluate high schools in just this way, but such measures have never become public and institutionalized because of resistance at the secondary school level.

use the schools of the other race to some extent as foci of comparison, they should be less likely to compare their performances only with other pupils inside the school, thus diminishing the negative effects of the average ability of the school.

Table 2 shows the independent partial correlations with college intentions of family status, individual ability, school status, and school average ability, separately for southern white, southern black, and all other high schools. The negative effect of a school's average ability decreases sharply for the southern white and black as compared to northern schools. In the southern schools, students are apparently less likely to make internal comparisons of their performances.[19]

TABLE 2

PARTIAL CORRELATIONS OF INDIVIDUAL AND SCHOOL CHARACTERISTICS WITH COLLEGE INTENTIONS, SEPARATELY FOR SOUTHERN WHITE, SOUTHERN BLACK, AND NORTHERN SCHOOLS

	Family Status	Mental Ability	School Status	School Average Ability	Number of Cases
Southern white schools	21	20	08	– 01	7,595
Southern black schools	.10	10	–.07	– 03	1,147
All other (northern) schools	19	.27	.10	–.06	26,588

SUMMARY

The tendency of the present argument has been to refine and to specify further an often-reported finding that the social-status composition of a high school independently affects the college-going intentions of its students. This effect seems not to reflect organizational quality of the high school, but results rather from the social-class composition of the school. Whether the presence of many higher status students acts primarily by creating an informal peer climate favoring going to college, or by building an orientation toward college into the formal expectations and standards of the school is not clear. The small observed effect of school status upon college intentions masks two contrasting forces. There is a larger supportive effect of school status than has usually been reported. But there is a negative effect also; since higher status schools have more able students, negative ("frog pond")

[19] The data for southern black schools, however, are not very convincing; our measures of individual ability and family status show unexpectedly small effects on college intentions, while school status shows a surprising negative effect. These anomalies make it difficult to take seriously the fact that average school ability level has a smaller negative effect than in northern schools.

comparisons for any given student tend to lower aspirations. The extent to which this latter process operates depends upon the degree to which all schools are roughly equal in the standards by which a student's "academic worth" is defined.[20]

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[20] It is interesting to speculate about whether the negative effects of average pupil ability upon student choices in the college market might be found also in other, less market-related outcomes of high school socialization. It seems unlikely that student learning would be affected adversely by greater peer competition, but it would be interesting to discover whether such effects occur for socialization in values.

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Law, Policy, and Behavior: Educational Exchange Policy and Student Migration[1]

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The intent of legislation for educational exchange is to facilitate education but not to create an avenue resulting in extralegal immigration. The legislation does not achieve its end, although the initial relationship between visa and migration intentions appears to indicate that the law does work. It is demonstrated that the initial relationship is a function of extralegal devices working through the home country educational system and through needs of the labor market. The official policy of the United States is frustrated by the disparate interests of the several organizational role partners.

The extent to which behavior is congruent with law and public policy is open to question. Were there always congruence, jails and courts would be visited by tourists as monuments to current virtue and past cupidity. Even if this idyllic state were reached, it would still be problematic whether it would be attributable to respect for or fear of the law and its sanctions, or to other social forces. Often the law codifies sentiments which are strongly and universally held throughout the population which the law purports to regulate. It is possible too, that the law reflects individual utility, so that even without the law, men would behave similarly, each pursuing his own advantage. Recent studies have shown some legal compliance to be largely a function of interests (Feest 1968) or of regression to the mean (Campbell and Ross 1968) or unrelated to the severity of sanctions (Chambliss 1967).

This paper will examine the effects of legislation, administrative rules, and policy edicts upon Israelis involved in the educational exchange programs of the United States, in light of parallel utilitarian sources of compliance and noncompliance.

THE PROBLEM IN ITS HISTORICAL AND INSTITUTIONAL SETTING

Prior to the Second World War, few aliens came to the United States to study, the more usual movement being from the United States to Western Europe.[2] With the shift of the world's academic and scientific center to the United States, large numbers of foreign students began to come to American campuses and it became American policy to encourage and facilitate educa-

[1] The research reported herein was supported by the Office of Education, U.S. Department of Health, Education, and Welfare, project no. 6-1273.

[2] In 1835–36 there were four Americans in German universities; by 1895–96 the number had risen to 925 (Conrad 1884, pp. 30–36; Statistiches Bundesamt, 1966).

tional exchange. Through the years, legislation and administrative practices were created to deal with foreign students.[3] Educational programs were certified for foreign students;[4] consular procedures were devised to inform foreign students about their rights and obligations as nonimmigrant aliens; tests were developed to insure some minimum competence in English in those who hoped to study in the United States; scholarship and fellowship programs for particularly gifted foreign students were enacted. By the terms of the legislation and the ensuing regulations, up to forty federal departments have some stake and involvement in the program. At times, the increasing complexity of the program has led to embarrassing situations for the government, particularly insofar as educational exchange has become part of American competition with the USSR for the loyalties of people in developing nations.[5] Yet with all of its complexities, the program has seen the number of foreign students in the United States grow from 36,000 to 94,000 between 1956 and 1966 (the year in which data for the study reported herein were collected).

Under the terms of the program, stated explicitly in statutes and associated documents, foreign students are expected to return to their own countries upon completion of their studies. Yet, a very large proportion of the foreign students in the United States become immigrants.[6] Almost half of the science, technology, and medical immigrants from the developing nations originally came to the United States as students or trainees (Committee on Government Operations 1968, p. 7). Prior to the enactment of the Immigration Act of 1965, the developing countries had very low quotas and it is reasonably clear that the educational exchange acts were used covertly to facilitate immigration.

In developing the educational exchange program, two visa categories were devised. The two visa programs were not fully defined in the statute

[3] Three major pieces of legislation were passed which created the framework for the American educational exchange program: P.L. 80-402, 1948; P.L. 84-555, 1956; P.L. 87-256, 1961.

[4] In most cases, certification of a school's right to accept foreign students is a rather simple matter; schools which have been accredited are approved *pro forma* by the United States Office of Education. There have been instances, however, where approval has been rather problematic and even has been withheld; for example, see United States v. Tod, C.C.A.N.Y. 1924, 297 F. 172. The Tod case decided that a school of business may qualify as an academic institution for purposes of educational exchange. In another case, a school was not permitted to accept foreign students under the provisions of the acts on the grounds that its library facilities were inadequate (U.S. Department of Justice 1965).

[5] The American ambassador in Conkary had initiated arrangements for a group of Guinean students to study in the United States. The complexities of the rules delayed execution of his plan for a long period of time and seriously embarrassed the ambassador and, by extension, the Department of State (Alsop 1968, pp. 93–94).

[6] To cite but one of many such observations: "Approximately eight percent of Jordanian students never return. The student visa is often a device for emigration" (*Mid-East* 1969, p. 9).

until the Act of 1961, but they existed in earlier administrative procedures. The student visa (F visa) requires simply that the applicant be

> an alien having residence in foreign country which he has no intention of abandoning, who is a bona fide student qualified to pursue a full course of study and who seeks to enter the United States temporarily and solely for the purpose of pursuing such a course of study at an established institution of learning or other recognized place of study in the United States, particularly designed by him and approved by the Attorney General after consultation with the Office of Education of the United States, which institution or place of study shall have agreed to report to the Attorney General the termination of attendance of each nonimmigrant student, and if any such institution of learning or place of study fails to make reports promptly the approval shall be withdrawn. [U.S. Code, 8, 1101, 15 F]

The individual wishing to enter the United States on a student visa writes to an approved American school which, upon accepting him as a student, sends him an "I-20" form. The student presents this to the American Consul who, in turn, issues a student visa. The procedure is usually rather simple and straightforward, the only problems being whether the student has the capability to study in the American institution (a decision largely left to the school), whether the school may accept foreign students as part of the educational exchange program (determined by the United States Office of Education), and eliciting evidence that the student intends to return home (determined by the United States Consul).

The second visa program, designated the Exchange, or J visa, contains most of the same provisions with one notable exception. The person who has a student visa may become a permanent resident or immigrant if he is able to show that he is a "professional" worker, a requirement which is satisfied in practice by having earned a B.A. or its equivalent. The person holding an exchange visa, however, is required to leave the United States for two years after having completed his studies. If he wishes to remain in the United States he must be able to demonstrate that leaving the country would impose "exceptional hardship" on his spouse or child if they are United States residents or citizens or he must show that a two-year absence from the United States would be counter to American national interest (P.L. 87-256, 1961).

In practice, according to the State Department, student visa holders are more likely to remain in the United States. The State Department attributes the difference in rates of brain-drain for the two visa categories to differences in flexibility of rules and procedures (Howland 1967, pp. 25–26; Council on International Educational and Cultural Affairs 1967, p. 4). Among Israelis, those who enter the United States on exchange visas are more likely to return home than those who had student visas. Of those who received exchange visas, 65 percent expected to return compared with only

49 percent of the student visa recipients.[7] That the more stringent visa program shows a lower rate of intended migration does not, however, necessarily demonstrate that the law has been the instrument which achieved this end. While 58 percent of the holders of exchange visas considered adjustment of visas to be difficult, this was true of only 29 percent of those who entered on student visas. What is more striking is the great ignorance regarding adjustment, particularly among exchange visa holders.

Among recipients of student visas, 35 percent said they did not know the difficulties in adjusting their visas, while another 13 percent did not answer the question. Among those with exchange visas, the comparable figures were 54 percent and 19 percent. The rates of "don't know" and "no answer" are very high for each group, particularly so for those on the exchange visa program, suggesting that, for many of them, the issue of whether to

[7] The data for the study were collected by a Hebrew-language questionnaire mailed out in the late spring through the early winter of 1966. The population lists for the study were developed out of source lists made available by the Israel Government Bureau for Professionals in New York City, the United States Embassy in Tel Aviv, and the Institute of International Education in New York City. There was a very high degree of agreement among the source lists. The response rate to the questionnaire was 67 percent, yielding 1,934 usable cases. Intention to return to Israel was determined by the following question: "What do you think are the chances of your remaining permanently in the United States? Please place yourself somewhere along the following ladder:

I definitely will remain in the U.S. — I definitely will return to Israel

Of the respondents, 44 percent placed themselves on the extreme Israel end of the continum with another 19 percent taking a position one space to the left. The no answer rate on this question was 2 percent. Assuming that all of those on the extreme right on the scale and half of those in the next position to the left will definitely return to Israel and that all others will not, the marginal distribution on this variable is almost equal to the migration rate by Israeli students into the United States as calculated by the Immigration and Naturalization Service. (Treating the nine-point scale as a trichotomy, i.e., with the first position on the right equal to high intent to return to Israel, the next position as medium and the next several positions as low, yielded the same pattern of results. The dichotomous version is presented for simplicity and to conform to the best estimates of the actual rate of nonreturn.)

I decided that the highly charged question of migration for Israelis would make it unwise to force them into a dichotomous choice lest large numbers refuse to answer. Myers (1967, p. 54) found that 47 percent of the Israeli students who completed the annual foreign student census questionnaire of the Institute of International Education did not answer the question regarding their intention to return home, the average no-answer rate for all countries being only 30 percent.

The analysis presented here is restricted to persons who arrived in the United States with one of the two major educational visas (i.e., student exchange visas); 57 percent came initially on student visas, and 15 percent initially on exchange visas. Another 16 percent initially came on tourist visas which were changed (in almost every case) to student visas within a few months of their arrival. Another 7 percent came on immigrant visas, and 5 percent came on various other visas. Less than 1 percent did not answer this question. For a full description of the visa programs, see Klinger et al. (1966).

adjust the visa had not become sufficiently salient to have motivated them to seek out the facts for themselves. So much ignorance among an otherwise well informed population suggests that factors unrelated to types of visas might account for the different rates of migration reported by the State Department.[8] The difference, I suggest, arises from process of allocation of visas.

THE ALLOCATION OF VISAS

A rational system of allocating visas would minimize the loss of human capital by the sending country, an end which could be reached in two ways. The first might be to give more restrictive visas to those who are believed to be high migration risks. The second approach might be to assign the more restrictive visa to those whose migration would entail the highest loss of human capital; that is, exchange visas would be given to persons in whom the sending country has made the largest educational investment and who are expected to contribute most to the public good. In practice the second procedure is used; although the American statutes are silent, the assignment of the exchange visa is a function of the level of education attained in Israel and, within the level of education, it is a function of academic achievement (see table 1).[9]

ACADEMIC ACHIEVEMENT AND THE LABOR MARKET IN ISRAEL

As of the beginning of this decade, Israel stood third (after the United States and the Soviet Union) in university enrollments as a proportion of total population (Maddison 1965, p. 82). From 1962 through 1966 the number of students in Israeli institutions of higher learning doubled (*Statistical Bulletin of Israel* 1967, p. 114). Despite an enormous investment in higher education and a very rapid increase in the capacity of the higher educational system, a high proportion of Israeli young people continue to receive

[8] On the relationship between knowledge of and compliance with the law, see Ehrlich (1936, p. 368, passim).

[9] Regarding the "assignment of visas" by the consular authorities, there is considerable room for maneuver. The following comments by the Executive Secretary of the United States Educational Foundation in Israel give one a sense of the actual process of allocation of visas: "Now as to F and J visas . . . there is a great deal of administrative discretion in the assignment of these visas. I know of a number of cases in which well informed graduate as well as undergraduate students, after having received DSP-66s have returned them to the issuing university requesting I-20s. The universities generally comply. But the decision is not ours, nor the embassy's. If a student comes to the visa office with an I-20, he gets an F. If with a DSP-66, a J. The only cases we control, and as you know, they are very few, are our travel grantees, who must use the DSP-66s issued by us" (personal communication, June 28, 1967). Of those who received U.S. government scholarships, foundation scholarships, or fellowships, 54 percent received a J visa; among those who did not receive such support, 17 percent received a J visa.

part or all of their university education abroad (Maddison 1965, p. 82).[10]

In earlier days, both the ideology and objective needs of Israel tended to downgrade professionalism and professional skills. Recent developments have reoriented Israeli ideology and the demands made on Israeli young people. In the pre-state days there was a surplus of many professional skills. The Zionist movement was largely a student movement; students migrated to Israel and brought with them skills acquired in the universities of Europe. The German migration of the 1930s was another major source of professional and technical skills. The more recent immigration waves have been

TABLE 1

INITIAL VISA BY LEVEL OF EDUCATIONAL ACHIEVEMENT IN ISRAEL (PERCENTAGE OF EXCHANGE VISAS)

	Highest Degree Israel		
	None	B.A.	M.A. or More
B.A. grade average in Israel:			
High	...	24%	53%
N	..	71	106
Low	.	17%	35%
N	...	192	113
Irrespective of B.A. grades	12%	19%	48%
N	847	268	261

NOTE.—NA B.A. grades in Israel = 47.

largely from North Africa and the Levant; the new immigrants have had a much lower level of formal education than was the case for immigrants from the earlier waves. While the supply of high level manpower has decreased relatively, demand has increased. Having largely solved its basic agricultural problems, the Israeli economy has shifted its development thrust to industry and particularly science-based industry which needs more high level manpower. But Israeli universities cannot supply all of the high level manpower which the country needs. As a small country, committed to intellectual excellence, Israel suffers from two limitations in regard to the ability of the academic system to meet the skill requirements of the society. The first is in reference to the degree of specialization which its size permits.

[10] In addition to having a large portion of its young people studying abroad, Israel also brings many foreign students to its universities as part of its foreign aid program, particularly from Africa and Asia (Laufer 1967, pp. 187–200, passim). Spain occupies a similar position of being both a relatively large scale receiver and sender of students (OECD 1968, pp. 7–8), in this case for Latin America.

It cannot efficiently train manpower for all of the skills which the society demands.

Second, where Israel does offer training in a field, some students are encouraged to do some or all of their graduate work abroad for their own benefit and for the benefit of the society. The university in Israel is so structured that the student's academic life may be centered about one senior professor, one point of view, one school. In such situations it is often the practice to send the student abroad, or for the student to choose to go abroad, so that he may bring back fresh approaches to his field. This mechanism diminishes the particularism which small systems tend to generate.

TABLE 2

JOB WAITING BY LEVEL OF ACADEMIC ACHIEVEMENT IN ISRAEL (PERCENTAGE WITH JOB WAITING)

	HIGHEST DEGREE		
	None	B.A.	M.A.
Israel B.A. grades:			
High	. .	23%	50%
N	.	69	103
Low	. .	18%	33%
N.	.	186	108
Irrespective of B.A. grades.	11%	19%	42%
N . . .	789	259	250

NOTE.—NA Israel B.A. grades in Israel and/or job waiting = 121.

Given the deficit in high level manpower, some Israeli employers make work commitments to students prior to their study abroad. In making such commitments the employer decreases the student's uncertainty about his career prospects in Israel; of those students who have jobs waiting for them, 79 percent expect to return home compared with only 46 percent among those who do not have jobs.[11]

In offering a job to a student (where the student will begin to work some years after the offer is made and accepted) the employer, in effect, is shifting the risk from the student to himself. From the employer's perspective, risk taking is warranted when there is indication of adequate return on his investment. Insofar as the future productivity of a potential employee is predictable (or is believed to be predictable) from his academic record, the employer would be well advised to make job offers to students with superior academic records. The data in table 2 suggest that these calculations are

[11] The likelihood of having a job waiting was checked against the preference to return to Israel and other subjective characteristics that could predispose the Israeli student to return home. It was determined that objective characteristics, rather than prudence or preference were the controlling factors.

made by the employers when they make job offers to students. The higher the degree earned in Israel the greater the likelihood that the student has a job waiting; among those who have earned at least a B.A. in Israel, the higher their undergraduate grades, the more likely they are to have a job waiting.

ACADEMIC ACHIEVEMENT, THE LABOR MARKET, AND THE EFFECTIVENESS OF THE STATUTES

Both the student's position or prospects in the labor market at home and the kind of visa he obtains reflect his position with Israel's academic system. That position, obviously, is established prior to his negotiation for employment and to his receipt of a visa. The relationship among these three variables makes questionable the assumptions underlying the rules for allocating visas which were presented earlier.

TABLE 3

EXPECTATION OF RETURNING TO ISRAEL BY JOB WAITING BY INITIAL VISA

	Student Visa. Job Waiting		Exchange Visa. Job Waiting	
	Yes	No	Yes	No
Percentage who expect to return to Israel	79%	45%	83%	53%
N	122	896	119	151

NOTE.—NA job waiting = 88.

Insofar as the human capital model might be subsumed under a general market model, the present procedures for distributing visas would be a rational response to a situation of risk. By analogy to the equity and money markets, the level of return on investment is a function of risk. However, the extension of the physical capital model to all aspects of human capital overlooks an important distinction, for those with the highest human capital value are, as it were, self-hedged by being committed to jobs waiting for them in Israel; 12 percent of the student visa recipients report a job waiting for them compared with 44 percent of the exchange visa recipients. Since those who have jobs waiting for them are more likely to receive an exchange visa, it is apparently the interests of the students and not the strictures of the law that inhibit migration. Those with jobs waiting for them are far more likely to expect to return home, irrespective of the visa they hold (see table 3). The presumed effect of the exchange visa is actually a function of the coalescence of the academic and occupational systems in Israel and visa

allocation procedures in the United States. The law and its administration contribute little to stemming the brain-drain.[12]

BEYOND LEGISLATION: ADMINISTRATION AND POLICY

In addition to its power to constrain behavior through legislation, the state acts through the administration of the law and through policy statements. Matters of visa adjustment, waivers of exchange visa requirements, and similar issues are handled largely by the administrative courts established by the Immigration and Naturalization Service (INS). The INS makes the final decision in cases which come within its purview with the advice (but not consent) of the State Department. Commonly, the cultural attaché or another foreign service officer serving in the country of the student, opposes his application for a waiver. It may well be that the country is experiencing a severe shortage of physicians, nurses, or other health and welfare personnel. However, neither the representative of his own country nor the American Foreign Service Officer has any power to block the granting of the student's request for waiver of the two-year residence requirement. In deciding the case of a plea for waiver of the two-year rule, the position of the INS is that "if an opinion has been solicited from our State Department representatives abroad in the country to which this alien is to return, while it would be a factor to be considered by us in our determination, it would not be a governing factor" (Council on International Educational and Cultural Affairs 1966, p. 95).

The grounds for INS granting of a waiver, namely "exceptional hardship" for the applicant's spouse or child are clearly open to a wide variety of interpretations and permit enormous latitude in the administration of the law.[13] The INS has taken the position that it must "apply the rule with some liberality, being very anxious to serve the cause of human beings because we are dealing with the impact the return can conceivably have in

[12] Myers (n.d., chap. 7, p. 46) reports the same relationship between visa, job assurance, and expatriation for Peruvian students. In September 1961, the Congress noted certain inadequacies in the educational exchange program (see 87th Congress, House Report no. 1094) and worked toward tightening the regulations for J-visa recipients. Analysis of that part of the population which entered the United States after the new law was in effect showed no change in the relationships reported here. It was found that the pattern remained exactly the same as that which has been reported here, irrespective of year of entry into the United States.

[13] An attorney specializing in immigration procedures indicated that an exchange visa recipient having one American dependent has a fifty-fifty chance of adjusting his status while, if the exchangee has two American dependents, he can be sure of adjustment of status. An official of the Institute of International Education indicated that a female exchangee married to an American resident or citizen would find no difficulty in adjusting status to that of permanent resident. For a digest of recent cases involving applications for waivers on J-visa recipients, see *Interpreter Releases* (42, 1966). This issue gives one a sense of the way the administrative proceedings actually interpret "exceptional hardships."

causing irreparable damage or injury to the lives or professions of these people" (Council on International Educational and Cultural Affairs 1966, p. 92).

The State Department takes a much firmer position on adjustment based on a U.S. governmental agency claim that the applicant for waiver should possess such skills that the loss of them would be contrary to American public interest. The difference in attitude toward interpretation of the law is reflected in the fact that 83 percent of the recipients of waivers received them through claims (which were accepted by the INS) of exceptional hardship, while only 17 percent were granted on grounds of national interest.[14] The INS seems oriented toward the needs (and presumably the desires) of the students; the State Department has been oriented toward maximizing repatriation.

THE ROLE OF THE SCHOOL IN FACILITATING REPATRIATION

The college or university is the major nongovernmental partner in the international educational program. Its role in bringing the student to the United States has been discussed above. In regard to the student's stay here, the school has the obligation of notifying the Immigration and Naturalization Service of any violation of the terms of the student or exchange visa. Although systematic evidence on deviant behavior is notoriously difficult to find, it seems that many, if not most, schools do not energetically report violations. The foreign student "grapevine," on the other hand, reports a high incidence of violation.

There is no evidence that the government has actively encouraged the colleges and universities to encourage repatriation of their students and the universities do not seem to be inclined to do so. Foreign student advisers are client-oriented, working to help the student realize his own goals (Council on International Educational and Cultural Affairs 1966, pp. 101–2). In response to the question, "Do you ever discourage students from adjusting status?" one foreign student adviser responded: "Only if we feel that the application will be rejected. We attempt to maintain an excellent working relationship with INS and facilitate their [i.e., the student's] dealings with them."

Insofar as faculty members become involved, the students report that their professors are far more likely to suggest that the students remain in the United States. This professorial advice is not randomly distributed, but follows a pattern which would be expected concerning the academic system. Given the orientation of professors (i.e., their commitment to the development of their field rather than to the development of another nation), those

[14] Calculations based upon data presented in Council on International Educational and Cultural Affairs, Department of State 1967, p. 88.

students who show greatest promise of making a contribution to the development of the field tend to be advised to remain in the United States.

Israeli students have been through a very demanding academic system in Israel. At every level of the school system in Israel, from the time that the student is tracked into high school, through graduate school, the student's performance is monitored and evaluated. By the time the students enter graduate school in Israel, variations in academic performance have decreased sharply since the weaker students have been forced out of the educational system. American professors seem to respond to the filter effect of Israeli education; among those who have earned a graduate degree in Israel, undergraduate records are a much poorer predictor of American professorial advice than among those who have gone only as far as the B.A. in Israel (table 4).[16]

TABLE 4

ADVICE OF AMERICAN PROFESSORS BY LEVEL OF ACADEMIC ACHIEVEMENT IN ISRAEL (PERCENTAGE WHO REPORT ADVICE TO REMAIN IN UNITED STATES)

	Degree		
	None	B.A.	M.A.
Israel B.A. grades:			
High	.	38%	38%
N	.	64	102
Low	..	26%	35%
N	.	184	106
Irrespective of B.A. grades	24%	29%	39%
N	805	253	249

NOTE.—NA B.A. grades in Israel and/or advice = 115.

It has been demonstrated that professorial advice to remain in the United States is a function of academic accomplishment, which in turn has been shown to be a determinant of the student's initial visa. It follows that exchange visa recipients are more likely to have received advice from their American professors to remain in the United States; 38 percent of the exchangees report that their American professors advised them to remain here, compared with only 25 percent of those who hold student visas.

The pattern of advice is particularly striking in the light of the special obligations incumbent upon the Secretary of State and the educational institutions in admitting persons under the terms of the Exchange Visitors Act. Professors are responsive to the interests of their fields rather than to policy directives of the State Department.

[16] An analysis of the tracking system of Israeli education particularly as it affects study abroad will be found in Ritterband (in press).

SUMMARY AND CONCLUSIONS

At every turn in the analysis of the data, we have found that behavior of the students, their employers, and professors was predictable in terms of their interests. The apparent effectiveness of legal provisions was, in fact, the result of the congruence of interests and law. Where interests and law (or government policy) were in conflict, behavior followed interests rather than law. Each of the persons and organizations involved in educational exchange marches to the sound of a different drummer. Behavior would remain largely the same if there were neither law nor policy pronouncements.

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A Statistical Exposition of the "Before-After" and "After-Only" Designs and Their Combinations

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A unified treatment of the "before-after" and "after-only" designs and their combinations is given. These designs are viewed as instances of fractional or full replicates of 2^n factorials. If these designs are viewed in this way the experimenter has a greater chance of avoiding it falls to which he might otherwise succumb in the interpretation of the results. The paper tries to bring out clearly the type of information each design is capable of providing and under what conditions (assumptions) the results from each experiment can be given useful interpretations.

This paper gives a statistical exposition of the classical "before-after" and "after-only" designs and their combinations. The exposition given here differs from the ones now available in the literature in that the present treatment makes use of the fact that these designs are instances of fractional or full factorials, whereas the earlier treatments have failed to give this fact its due importance. This paper demonstrates that if the above feature of these designs is recognized, it will be possible to avoid many of the misconceptions about the information these designs are capable of supplying. It is hoped that the present treatment makes another contribution, namely, that it helps to close the gap between the writings on experimental designs available in the sociological-methods literature and the treatment of the same topic one finds in statistical textbooks.

THE GENERAL CHARACTERISTICS OF THE "BEFORE-AFTER" AND "AFTER-ONLY" EXPERIMENTAL DESIGNS

The general characteristics of the "before-after" and "after-only" designs can best be brought out by means of a simple example. The following is a typical application of the classical "before-after" design in experiments in social engineering. A rural community (village) in an underdeveloped country is chosen as a site for studying the effectiveness of a given family-planning action program. The family-planning practices of all married women in the village are ascertained before the action program starts. The action program is then carried out. This may involve spreading information concerning physiology of reproduction and the working of different contraceptives, and/or it may consist in attempting to persuade the couples to adopt small-family preferences. After the program has been completed, the family-planning practices of the women in the community are again ascertained. The

experiment thus provides measurements of the family-planning practices of a group of subjects before as well as after they have been exposed to the experimental stimulus (the action program); hence the experiment is said to have a "before-after" design. If the design provides measurements on the dependent variable (family-planning practices, in our example) only after the experimental stimulus has been applied, then the design is called an *"after-only" design.*

In recent expositions (e.g., see Ross and Smith 1968), it has been held that a proper specification of the structure of the above designs demands the introduction of a factor, called the uncontrolled events, presumed to be at work as the experiment is in progress and, consequently, influencing the magnitude of the "after" measurements. An example of such an uncontrolled event in the case of a family-planning experiment will be the activities of an external agency, other than the experimenter, aiming to promote family planning in the community chosen for the experiment. The influence of the uncontrolled events on the outcome of the experiment may be slight in some cases and substantial in others. Since the experimenter is presumed to have no control over such events, it is considered safer to assume that such events are always present. That assumption would make the inferences drawn from the experimental results concerning the impact of the experimental stimulus rather conservative. In other words, the specification that the influence of the uncontrolled events is present amounts to committing oneself to err on the safe side.

Another interesting feature emphasized in the recent expositions of the above experimental designs is that the act of exposing the subjects to the "before" measurements or the pretest tends to have an influence on the performance of the subjects during the experiment and consequently on the "after" measurements.

Thus three factors are assumed to be at work: P, the pretest; E, the experimental stimulus; and U, the uncontrolled events. P and E may be present or absent in a design, but U is always present. I shall now examine from a statistical standpoint the structure and analysis of experiments involving one or more of the above three factors.

A FULL 2^3 FACTORIAL EXPERIMENT

To facilitate my exposition of the "before-after" and "after-only" experiments, I shall briefly review the structure and analysis of an experiment which has to do with ascertaining the physical weights of three objects. This problem has been discussed by Davies (1956, p. 445); however, my treatment of the problem is somewhat different from his. I shall refer to this experiment below as the weighing experiment.

Suppose we want to determine the weights of three objects: P, E, and U. Let there be only one balance available and let that be one with a zero

error, that is, one that gives a nonzero reading when no object is placed on it. Common sense tells us that we can estimate the weights of P, E, and U, using the above balance, if we have the following four readings on it: one when no object is on it and the other three when P, E, and U are placed on it in turn. But, for the purpose of understanding the structure of a 2^3 factorial experiment, let us suppose that we shall take the eight readings shown in table 1.

In table 1 the readings on the balance have been represented by such symbols as $y(\bar{p}\ \bar{e}\ \bar{u})$, $y(p\ \bar{e}\ \bar{u})$, etc. The bar above p, e, or u in any of these symbols indicates that the corresponding object P, E, or U is absent when the reading represented by the symbol is taken.

TABLE 1

WEIGHING DESIGN INVOLVING EIGHT READINGS

Object or Objects on Balance When Reading Is Taken	Corresponding Reading
None (P, E, and U absent)	$y(\bar{p}\ \bar{e}\ \bar{u})$
P alone (E and U absent)	$y(p\ \bar{e}\ \bar{u})$
E alone (P and U absent)	$y(\bar{p}\ e\ \bar{u})$
P and E (U absent)	$y(p\ e\ \bar{u})$
U alone (P and E absent)	$y(\bar{p}\ \bar{e}\ u)$
P and U (E absent)	$y(p\ \bar{e}\ u)$
E and U (P absent)	$y(\bar{p}\ e\ u)$
P, E, and U	$y(p\ e\ u)$

By examining the different readings, it is easy to see that each of the following differences provides an estimate of the weight of the object P:

$$y(p\ \bar{e}\ \bar{u}) - y(\bar{p}\ \bar{e}\ \bar{u})\,, \tag{1a}$$

$$y(p\ e\ \bar{u}) - y(\bar{p}\ e\ \bar{u})\,, \tag{1b}$$

$$y(p\ \bar{e}\ u) - y(\bar{p}\ \bar{e}\ u)\,, \tag{1c}$$

$$y(p\ e\ u) - y(\bar{p}\ e\ u)\,. \tag{1d}$$

These differences represent the increases in the readings on the balance due to the weight of P in different circumstances: (1a) when neither E nor U is on the balance, (1b) when E but not U is present, (1c) when U but not E is present, and (1d) when both E and U are present.

Although, in the experiment under discussion, there is no reason to believe that the quantities (1a)–(1d) will be significantly different from one another, we need to know, for the purpose of our exposition of the "before-after" and "after-only" designs, the consequences of significant differences among (1a)–(1d) for the interpretation of the results of the experiment. If the quantities (1a)–(1d) differ among themselves significantly, then one

should suspect that some of these quantities may have components other than the weight of P; hence one should interpret those quantities separately as indicated in the preceding paragraph, and their average should not be interpreted, under those circumstances, as representing the weight of P. If (1a) differs significantly from (1b), the difference, (1a) − (1b), shown in (2a), has the following simple meaning: it represents the excess in the apparent effect of P in the presence of E over that in the absence of E, U being absent throughout. If (2a) is significantly different from zero, one must infer that the presence of E somehow influences the effect of P. The difference (2b) has an interpretation similar to that of (2a), except that while (2a) pertains to the situation when U is absent, (2b) pertains to the situation when U is present. If (2a) or (2b) is significantly different from zero,

$$y(p\,e\,\bar{u}) - y(\bar{p}\,e\,\bar{u}) - y(p\,\bar{e}\,\bar{u}) + y(\bar{p}\,\bar{e}\,\bar{u})\,, \tag{2a}$$

$$y(p\,e\,u) - y(\bar{p}\,e\,u) - y(p\,\bar{e}\,u) + y(\bar{p}\,\bar{e}\,u)\,, \tag{2b}$$

there is said to be an interaction between P and E, denoted by the symbol (PE). In a similar fashion, the difference [(2a) − (2b)], if significantly different from zero, is interpreted to mean that the interaction between P and E differs according as U is present or not, and that influence of U on (PE) is denoted by the symbol (PEU).

If (2a) and (2b) are both negligible, [(2a) − (2b)] will also be negligible. Hence, if the interaction (PE) is nonexistent, so is (PEU). The converse, however, is not true; even when (PEU) is nonexistent, (PE) may be present.

Obviously, in the problem of determining the physical weights of P, E, and U, a priori considerations dictate that none of the interactions is to be treated as present. Hence there is no reason why the four estimates (1a)–(1d) should not be combined to provide a single estimate of the weight of P. In the case of the "before-after" and "after-only" experiments, however, it is not always clear whether the interactions are present. Recent writers on these experiments have emphasized that the likely presence of the interactions must be recognized when interpreting the results of these experiments (see, e.g., Ross and Smith 1965). But, in my opinion, the discussions now available in the literature concerning the implications of the presence of interactions for the interpretation of the results furnished by such experiments are not satisfactory. The main focus of the following discussion will be on those implications. But in order to examine them we need to complete the description of the analysis of the 2^3 factorial experiment. Table 2 shows the formulas for estimating the main effects (weights) and interactions, if any, on the basis of the available observations. The table shows only the signs to be attached to the different observations to obtain linear combinations of them; the linear combination thus obtained must be multiplied by one-fourth in each case to get the estimate required. That there is no new

principle involved here can be easily verified by noting that when the signs indicated under (*P*) are attached to the respective observations and the resulting linear combination is obtained, one gets the sum of the four comparisons (1a)–(1d), division of which by four gives the average of the four individual estimates (1a), (1b), (1c), and (1d). The same comments apply to the main effects (*E*) and (*U*). The signs attached to the different observations in the case of the interaction (*PE*) are taken directly from the definition of that interaction given above; the linear combination implied by the signs under (*PE*) gives the sum of the two comparisons (2a) and (2b), each of which represents the interaction (*PE*), one in the absence of *U* and the

TABLE 2

FORMULAS* FOR ESTIMATING THE MAIN EFFECTS AND INTERACTIONS IN THE CASE OF A 2^3 FACTORIAL DESIGN, THAT IS, ONE INVOLVING THREE FACTORS EACH AT TWO LEVELS

OBSERVATIONS	MAIN EFFECTS AND INTERACTIONS						
	(*P*)	(*E*)	(*U*)	(*PE*)	(*PU*)	(*EU*)	(*PEU*)
$y(\bar{p}\ \bar{e}\ \bar{u})$	−	−	−	+	+	+	−
$y(p\ \bar{e}\ \bar{u})$	+	−	−	−	−	+	+
$y(\bar{p}\ e\ \bar{u})$	−	+	−	−	+	−	+
$y(p\ e\ \bar{u})$	+	+	−	+	−	−	−
$y(\bar{p}\ \bar{e}\ u)$	−	−	+	+	−	−	+
$y(p\ \bar{e}\ u)$	+	−	+	−	+	−	−
$y(\bar{p}\ e\ u)$	−	+	+	−	−	+	−
$y(p\ e\ u)$	+	+	+	+	+	+	+

* To get the complete formula an external multiplier should be attached to the linear combination obtained in each case by using the appropriate signs indicated under each main effect and interaction; the external multiplier for all main effects and interactions in the case of a 2^3 factorial design is $\frac{1}{4}$. Thus, for example, the main effect (*P*) is given by $\frac{1}{4}[-y(\bar{p}\ \bar{e}\ \bar{u}) + y(p\ \bar{e}\ \bar{u}) - y(\bar{p}\ e\ \bar{u}) + y(p\ e\ \bar{u}) - y(\bar{p}\ \bar{e}\ u) + y(p\ \bar{e}\ u) - y(\bar{p}\ e\ u) + y(p\ e\ u)]$

other in the presence of *U*. The arrays of signs for each of the other interactions have been similarly derived. The same multiplier, one-fourth, is applied to each linear combination because for reasons of symmetry the main effects and interactions should all stand on the same footing (see Davies 1956, p. 261).

In addition to the formulas given above for a 2^3 experiment, we need the formulas for 2^2 experiments and for experiments involving one factor at two levels. These are given in tables 3 and 4. Note that the external multiplier for estimating the main effects and the two-factor interaction in the 2^2 experiments is one-half, and that for the experiment involving one factor with two levels is one.

We are now ready to discuss the "before-after" and "after-only" designs, each involving the use of one group, and the combinations of such designs, involving the use of two or more groups. Let us first discuss a "before-after" experiment using one group and three factors (stimuli).

"BEFORE-AFTER" EXPERIMENT USING ONE GROUP AND THREE STIMULI

In this type of an experiment, a group of subjects is first submitted to a pretest or "before" measurement and then exposed to the experimental stimulus taken for investigation. It is assumed that the subjects are exposed to a set of uncontrolled events while the experiment is in progress. The pretest, the experimental stimulus, and the set of uncontrolled events may therefore be taken as three factors at work here. Theoretically any one of

TABLE 3

FORMULAS* FOR ESTIMATING THE MAIN EFFECTS AND INTERACTION IN THE CASE OF A 2^2 FACTORIAL DESIGN

	MAIN EFFECTS AND INTERACTION		
OBSERVATIONS	(P)	(E)	(PE)
$y(\bar{p}\ \bar{e})$	−	−	+
$y(p\ \bar{e})$.	+	−	−
$y(\bar{p}\ e)$	−	+	−
$y(p\ e)$	+	+	+

* See the note to table 2. The external multiplier in the case of a 2^2 design is $\frac{1}{2}$. Thus, for example, the main effect (P) is given by $\frac{1}{2}[-y(\bar{p}\ \bar{e}) + y(p\ \bar{e}) - y(\bar{p}\ e) + y(p\ e)]$.

TABLE 4

FORMULA* FOR ESTIMATING THE MAIN EFFECT IN THE CASE OF A 2^1 FACTORIAL DESIGN

Observation	Main effect (P)
$y(\bar{p})$....	−
$y(p)$.	+

* See the note to table 2. The external multiplier in the case of a 2^1 design is 1. Thus $(P) = y(p) - y(\bar{p})$.

the three factors may be present or absent; in other words, each factor has two levels. Hence we have a 2^3 factorial experiment; however, instead of eight observations constituting the full factorial, only two observations are available, those represented, respectively, by the pretest and posttest mean scores. The pretest mean score is like the zero error of the balance in the weighing experiment; the only difference is that in the present case the observation is the mean of several observations, whereas in the weighing experiment, as described above, the zero-error reading is just one reading. It should be emphasized that no new principle is involved in estimating the

main effects and interactions when the required linear combinations are obtained in terms of mean scores rather than in terms of individual observations, provided, of course, that the numbers of observations on the basis of which the means are calculated are the same. The calculations involved in the tests of significance of the estimates thus obtained in terms of mean scores would, however, be slightly different. (Because of limited space these calculations will not be reviewed here, and I shall not deal with the situations in which the mean scores are based on unequal numbers of observations. For a discussion of these topics, the reader is referred to the textbooks on design and analysis of experiments cited in the references.) I shall confine my attention to the formulas for estimating the main effects and interaction and shall assume that the mean scores involved in any estimating equation are based on the same number of observations. Now, since the mean pretest score is analogous to the zero-error reading on the balance, we can represent it by the symbol $y(\bar{p}\ \bar{e}\ \bar{u})$. Similarly, we can represent the posttest mean score by the symbol $y(p\ e\ u)$, since it stands for the cumulative impact of the pretest, the experimental stimulus, and the set of uncontrolled events. The difference between these two mean scores is the only comparison the experiment under discussion provides. From the formulas for the main effects and interactions in a 2^3 factorial experiment (given in table 2), it can be easily verified that

$$d_1 = y(p\ e\ u) - y(\bar{p}\ \bar{e}\ \bar{u}) = (P) + (E) + (U) + (PEU)\ . \qquad (3)$$

The reader who is familiar with the statistical literature on factorial experiments in fractional replicates will note that an experiment in which the only available observations are $y(p\ e\ u)$ and $y(\bar{p}\ \bar{e}\ \bar{u})$ is a quarter replicate of a 2^3 full factorial arrangement, and that for the quarter replicate represented by $y(p\ e\ u)$ and $y(\bar{p}\ \bar{e}\ \bar{u})$, the two-factor interactions—(PE), (PU), and (EU)—are the *defining contrasts*, while the main effects—(P), (E), and (U)—and the three-factor interaction—(PEU)—are *aliases*.

Once equation (3) is written, it might appear that what remains to be done in the analysis of the results of the experiment under discussion is to solve for the unknowns, (P), (E), (U), in that equation. But, as we shall see in a moment, the problem of making useful inference from the results of the above experiment involves more than the algebraic problem of solving for the unknowns in equation (3). This point can be appreciated if we examine one set of solutions for the unknowns in equation (3). Since there are four unknowns involved, unique solutions for them require three more equations connecting the unknowns. These additional equations have to be derived from considerations external to the experimental results; the experiment by itself cannot help formulate any equation other than equation (3). For the purpose of illustration, let us suppose that the experimenter has some a priori evidence that the three-factor interaction (PEU) is negligible or

nonexistent. Let us also suppose that he knows the values of h and k, the former standing for the ratio (P)/(E), and the latter, for $(U)/(E)$. These three pieces of information together with equation (3) lead to the following solutions for (P), (E), and (U):

$$\begin{aligned} (P) &= h\,d_1/(1+h+k)\,, \\ (E) &= d_1/(1+h+k)\,, \\ (U) &= k\,d_1/(1+h+k)\,. \end{aligned} \tag{4}$$

It is particularly of interest to note that no assumption about the two-factor interactions, (PE), (PU), and (EU), is necessary to obtain the algebraic solutions for the unknowns in equation (3) because these interactions do not appear in that equation. But obtaining algebraic solutions for (P), (E), and (U) is one thing, while interpreting the meaning of those solutions is another. Thus, whereas it has been possible to arrive at the solutions given in (4) for (P), (E), and (U) without making any assumptions concerning the two-factor interactions, it is impossible to give any practically useful interpretation for the solutions if it cannot be assumed that the two-factor interactions are negligible or nonexistent.

The following example, although it oversimplifies the issue, illustrates the above point. There are three factors, P, E, and U. U has no effect, while P and E have positive effects and a positive interaction. We shall suppose that P gives an increase of 40 units in the dependent variable when E is absent and 60 when E is present, while E gives an increase of 80 in the absence of P and 100 in its presence. With a basal level (corresponding to the zero error of a weighing machine) of fifty and assuming no experimental error, the results of the eight treatment combinations are found to be as follows:

$$\begin{aligned} y(\bar{p}\,\bar{e}\,\bar{u}) &= 50\,, & y(\bar{p}\,\bar{e}\,u) &= 50\,, \\ y(p\,\bar{e}\,\bar{u}) &= 90\,, & y(p\,\bar{e}\,u) &= 90\,, \\ y(\bar{p}\,e\,\bar{u}) &= 130\,, & y(\bar{p}\,e\,u) &= 130\,, \\ y(p\,e\,\bar{u}) &= 210\,, & y(p\,e\,u) &= 210\,. \end{aligned}$$

The experimenter, of course, is not aware of these results. He has access to only the quarter-replicate consisting of $y(\bar{p}\,\bar{e}\,\bar{u}) = 50$ and $y(p\,e\,u) = 210$ Using the contrast available from the above quarter-replicate, he writes the following equation:

$$160 = y(p\,e\,u) - y(\bar{p}\,\bar{e}\,\bar{u}) = (P) + (E) + (U) + (PEU)\,. \tag{5}$$

Now suppose that a priori considerations have led him to conclude that (U) and the interactions involving U are negligible. On that basis he rewrites the above equation as $160 = (P) + (E)$, which leads to the solutions $(E) = 160/(1+h)$, and $(P) = h\;160/(1+h)$, where $h = (P)/(E)$. Thus if he knows that $h = \frac{1}{3}$, he gets the estimates $(E) = 120$ and $(P) = 40$. Having

obtained these estimates, the experimenter is confronted with the problem of interpreting them. Can he say that the above estimates reveal a positive effect of 40 for the factor P and a positive effect of 120 for the factor E? Such an interpretation amounts to assuming that there is no interaction between P and E when, in fact, there is a positive interaction between them. Does the problem of interpretation become simplified if the experimenter assumes that there is a positive interaction between P and E? The answer is negative because the quarter-replicate under discussion does not provide enough information for interpreting the effects of the different factors when the interactions are present. If the interaction (PE) is assumed to be present, the experimenter should be able to say what the effect of P will be when E is absent and/or what the effect will be when E is present. Similarly, he should be able to say what the effect of E will be when P is present and/or what it will be when P is absent. But the quarter-replicate consisting of $y(p\,e\,u)$ and $y(\bar{p}\,\bar{e}\,\bar{u})$ does not provide enough information for such a description. In fact, the experimenter is not even able to say whether the estimate 40 obtained above for (P) represents the effect of P in the absence of E or whether it represents the effect of P in the presence of E; all that he might be able to say is that it probably represents an average of the effects of P under the above two situations. The last type of interpretation will be of little practical use, since those who want to use the experiment may want to know the effect of P in specific contexts such as when E is present or when E is absent.

If the interactions are actually absent, the above problem does not arise, as can be seen from the following example, in which not only are (U) and all the interactions involving U nonexistent, but the interaction (PE) is also absent:

$$\begin{aligned} y(\bar{p}\,\bar{e}\,\bar{u}) &= 50\,, & y(\bar{p}\,\bar{e}\,u) &= 50\,,\\ y(p\,\bar{e}\,\bar{u}) &= 90\,, & y(p\,\bar{e}\,u) &= 90\,,\\ y(\bar{p}\,e\,\bar{u}) &= 130\,, & y(\bar{p}\,e\,u) &= 130\,,\\ y(p\,e\,\bar{u}) &= 170\,, & y(p\,e\,u) &= 170\,. \end{aligned}$$

As in the case of the previous example, the quarter-replicate, $y(\bar{p}\,\bar{e}\,\bar{u})$ and $y(p\,e\,u)$, leads to the following solutions: $(E) = 120/(1 + h)$ and $(P) = h\,120/(1 + h)$, where $h = (P)/(E)$. If the experimenter is able to guess the correct value of h (which in this case is $\frac{1}{2}$) he can get the correct estimates of (E) and (P). The estimate thus obtained for (P) can be interpreted as the effect of P in all situations, that is, irrespective of the combination of P and E present. The estimate obtained for (E) can be similarly interpreted. Such an interpretation, in this case, is not only valid (since the interaction between P and E is absent) but can be easily understood from a practical (manipulative) perspective.

From what I have said above, it follows that the one-group design under discussion is not to be used if there is reason to believe that the two-factor interactions exist. It should also be emphasized that the results of the experiment fail to shed any light on whether the two-factor interactions are present. As has been pointed out above, the two-factor interactions, (PE), (PU), and (EU) are the defining contrasts of the quarter-replicate consisting of $y(\bar{p}\ \bar{e}\ \bar{u})$ and $y(p\ e\ u)$, and no fractional replicate can provide information on its own defining contrasts. *The point that the one-group design cannot help estimate* (PE), (PU), *and* (EU), *no matter what assumptions the experimenter is willing to make about the main effects, and the three-factor interaction,* (PEU) *has been missed, as far as I know, by all those who have written on this design so far.* (See in this connection Ross and Smith 1968.)

"BEFORE-AFTER" EXPERIMENT USING ONE GROUP AND TWO STIMULI

Let us now turn our attention to a second type of one-group "before-after" design in which the group is not exposed to the experimental stimulus; after the "before" measurement or the pretest, the group is left undisturbed except for the operation of the uncontrolled events. Later the "after" measurements are obtained on each subject. Employing the same notation as before (P for the pretest and U for the uncontrolled events), the mean pretest score may be represented by the symbol $y(\bar{p}\ \bar{u})$, and the mean posttest score, by the symbol $y(p\ u)$. Note that, in using the above symbols, we are treating the experiment as one involving two factors, P and U. If, however, as will be the case in some contexts dealt with below, all three factors, P, E, and U, are considered relevant, $y(\bar{p}\ \bar{e}\ \bar{u})$ and $y(p\ \bar{e}\ u)$ should be used instead of $y(\bar{p}\ \bar{u})$ and $y(p\ u)$, respectively. For the moment we shall treat the experiment under discussion as an instance of a 2^2 factorial experiment, the two factors being P and U. From the formulas given in table 3 for a 2^2 factorial experiment, it can be easily verified that

$$d_2 = y(p\ u) - y(\bar{p}\ \bar{u}) = (P) + (U)\ . \qquad (6)$$

If some information concerning (P) and/or (U) is available from external sources—for example, the value of the ratio $(U)/(P)$—then that piece of information may be used together with equation (6) to arrive at unique estimates of (P) and (U). Again note that the interaction term (PU) does not appear on the right-hand side of (6); consequently, one need not make any assumption concerning (PU) in order to solve for (P) and (U). However, the solution thus obtained for (P) and/or (U) cannot be interpreted if one cannot assume that (PU) is nonexistent or negligible, because the experiment does not provide sufficient information for an interpretation of (P) and (U) in the presence of interaction between P and U.

It should also be noted that, contrary to what some of the earlier expositions (e.g., Ross and Smith 1968) of the above design would have the

reader believe, *the experiment is incapable of shedding any light on the existence or nonexistence of the interaction* (PU), which, incidentally, is the defining contrast of the half-replicate of the 2^2 factorial arrangement we are dealing with here.

EXPERIMENTS INVOLVING TWO OR MORE GROUPS

So far I have examined only single-group experiments. I shall now consider experiments involving two or more groups. When two or more groups are available for experimentation, one of two courses may be adopted by the experimenter. He may treat the experiment on each group independently of the others, as though he is conducting different single-group experiments, taking care, however, to design each experiment so that when the information obtained from the different experiments is put together, the estimates that are of primary interest will be at hand. If this strategy is adopted, the specification of the model underlying the experiment on each group will be quite flexible; thus, for example, one experiment may be treated as an instance of a fractional or full replicate of a 2^3 factorial, while the experiment on another group may be treated as an instance of a fractional or a full replicate of a 2^2 factorial. This flexibility is absent if the experimenter adopts the alternative strategy, which consists in treating the different groups available as though they are to be exposed to the different parts of the same experiment. If this strategy is adopted, it is not permissible, for obvious reasons, to treat one group as though it is exposed to one design (e.g., a fractional replicate of a 2^3 factorial) while another is treated as though it is exposed to another design (e.g., a fractional replicate of a 2^2 factorial). It should be noted, however, that, although the second strategy does not have the flexibility of the first the estimates derived from the second strategy will, under certain conditions, be more precise than those derived from the first.

Another general remark is pertinent here. When two or more groups are involved in an experiment, the statistical principles of experimentation require that the groups be formed by combining subjects at random and then that the treatment combinations be allocated to the groups at random. Randomization would permit, among other things, the use of the mean pretest score obtained for one group as an estimate of the mean pretest score for a companion group in situations when the latter has not been pretested.

"BEFORE-AFTER" EXPERIMENT INVOLVING TWO GROUPS

Let us now consider a two-group experiment in which both the groups are pretested and are assumed to be exposed to the same set of uncontrolled events, but only one group is exposed to the experimental stimulus. I shall

treat one group as providing a quarter-replicate of a 2^3 factorial and the other, a half-replicate of a 2^2 factorial. From the former we get equation (7), and from the latter, equation (8):

$$d_1 = y(p\ e\ u) - y(\bar{p}\ \bar{e}\ \bar{u}) = (P) + (E) + (U) + (PEU)\ , \tag{7}$$

$$d_2 = y(p\ u) - y(\bar{p}\ \bar{u}) = (P) + (U)\ . \tag{8}$$

Subtracting (8) from (7), we have

$$d_1 - d_2 = (E) + (PEU)\ . \tag{9}$$

A knowledge of the relative magnitude of (PEU) with respect to (E), if that information can be obtained from external sources, would permit, when coupled with equation (9), unique solutions for (E) and (PEU). Thus, for example, if it is known on a priori considerations that (PEU) is almost negligible, then one may take $d_1 - d_2$ as providing an estimate of (E). Similarly, if the relative magnitude of (U) with respect to (P) can be assumed, equation (8) would lead to unique estimates of (P) and (U). The estimates thus obtained for (E), (P), and (U) cannot be interpreted unless it can be assumed that the two-factor interactions are absent, since the experiment does not provide enough information helpful in interpreting the main effects in the presence of interaction.

The reader may verify that if the mean pretest and mean posttest scores supplied by the group unexposed to the experimental stimulus are treated as providing a quarter replicate of a 2^3 factorial, the equation involving the available contrast would be the following instead of (8):

$$d_2 = y(p\ \bar{e}\ u) - y(\bar{p}\ \bar{e}\ \bar{u}) = (P) + (U) - (PE) - (EU)\ . \tag{8'}$$

Instead of (9), we will then have, by subtracting (8′) from (7),

$$d_1 - d_2 = (E) + (PE) + (EU) + (PEU)\ . \tag{9'}$$

It can easily be seen that, as far as estimating (E) is concerned, there is no difference between the two models—the one leading to (7), (8), and (9) and the other leading to (7), (8′), and (9′)—if it can be assumed that the interactions involving E are negligible or nonexistent. For, under that assumption, both the models lead to the estimate $d_1 - d_2$ for (E). But, if the interactions involving E cannot be assumed to be negligible or nonexistent, the two models may lead to different estimates of (E). In that case, however, the estimates obtained in either model for (E) cannot be interpreted, since the experiment does not provide enough information for the effect of E in the presence of interaction to be interpreted. The same comments apply to estimating (P) and (U) and interpreting the estimates. Thus the experiment under discussion is useful only if the two-factor interactions are known to be negligible or nonexistent, and in that situation it makes no difference whether the experiments on both the groups are treated as instances of

quarter-replicates of a 2^3 factorial or whether, while the experiment on one group is treated in that manner, that on the other is treated as a half-replicate of a 2^2 factorial.

"AFTER-ONLY" EXPERIMENTS USING TWO GROUPS

In "after-only" experiments involving two groups, pretests are not conducted in either of the groups. One group is exposed to the experimental stimulus while the other is not. The same set of uncontrolled events are assumed to operate on both the groups while the experiment is in progress in one of them. The two factors at work are E, the experimental stimulus, and U, the uncontrolled events. Observations are available on only two treatment combinations, E and U, and U alone. The mean posttest score from the group exposed to the experimental stimulus may be denoted by $y(e\,u)$, and the corresponding mean posttest score for the other group, by $y(\bar{e}\,u)$. These two observations may be treated as constituting a half-replicate of a 2^2 factorial. From the formulas given in table 3, it can be verified that

$$d_3 = y(e\,u) - y(\bar{e}\,u) = (E) + (EU)\ . \tag{10}$$

If the interaction (EU) can be assumed to be negligible or nonexistent, the difference d_3 in (10) may be taken as an estimate of (E); no other piece of information is needed to make this inference, or to interpret the estimate obtained for (E). Interestingly enough, even if (EU) cannot be assumed to be negligible, the difference d_3 has a simple interpretation. It represents the effect of E when U is present throughout. Of course, such an interpretation has practical utility only if the experimenter is able to identify the uncontrolled events constituting the set U. To put it differently, the estimate obtained above for (E) may be assumed to represent the effect of E; however, that estimate may not be applicable to situations in which U is absent or in which the constituents of U are different from those obtaining in the particular experiment from which (E) is estimated.

This design may be considered as superior to all the others so far discussed from the point of view of providing an estimate of (E) which can be interpreted without the aid of any external piece of information.

SUMMARY OF THE ESSENTIAL CHARACTERISTICS OF SELECTED TWO-GROUP AND THREE-GROUP EXPERIMENTS

Tables 5 and 6 summarize the main characteristics of a number of experiments, some of them similar, and others not so similar, to the ones already discussed. Table 5 deals with two-group experiments, and table 6, with three-group ones. Each experiment is treated as though it is composed of two or three single-group experiments.

If a group has not been pretested, a question mark appears under Mean

Pretest Score. For each such group, it is assumed that one may use as an estimate of the mean pretest score the corresponding mean observed for a companion group. The validity of this assumption depends upon whether randomization has been employed in assigning groups to the different procedures and subjects to the groups.

No attempt has been made in these tables to enumerate the types of inferences possible for each experiment under given conditions that specify the information available from external sources.

TABLE 5

THE MAIN CHARACTERISTIC FEATURES OF A FEW TWO-GROUP EXPERIMENTS

Experiment	Group	Design for Each Group	Observations: Mean Pretest Score*	Observations: Mean Posttest Score	Estimating Equation†
A . .	1	"Before-after"	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ e\ u)$	$d=(P)+(E)+(U)+(PEU)$
	2	"After-only"	?	$y(\bar{p}\ e\ u)$	$d=(E)+(U)$
B	1	"Before-after"	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ e\ u)$	$d=(P)+(E)+(U)+(PEU)$
	2	"After-only"	?	$y(\bar{p}\ \bar{e}\ u)$	$d=(U)$
C . .	1	"Before-after"	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ \bar{e}\ u)$	$d=(P)+(U)$
	2	"After-only"	?	$y(\bar{p}\ e\ u)$	$d=(U)+(E)$

NOTE.—None of the two-group experiments sheds any light on the two-factor interactions.

* A question mark in this column indicates that the pretest mean score is not available for the group

† d = difference. observed mean posttest score minus observed or estimated mean pretest score.

TABLE 6

THE MAIN CHARACTERISTIC FEATURES OF A FEW THREE-GROUP EXPERIMENTS

Experiment	Group	Design for Each Group	Observations: Mean Pretest Score*	Observations: Mean Posttest Score	Estimating Equation†
A . . .	1	"Before-after"	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ e\ u)$	$d=(P)+(E)+(U)+(PEU)$
	2	"Before-after"‡	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ \bar{e}\ u)$	$d=(P)+(U)$
	3	"After-only"	?	$y(\bar{p}\ e\ u)$	$d=(E)+(U)$
B . .	1	"Before-after‡	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ \bar{e}\ u)$	$d=(P)+(U)$
	2	"After-only"	?	$y(\bar{p}\ e\ u)$	$d=(E)+(U)$
	3	"After-only"‡	?	$y(\bar{p}\ \bar{e}\ u)$	$d=(U)$
C. . .	1	"Before-after"	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ e\ u)$	$d=(P)+(E)+(U)+(PEU)$
	2	"After-only"	?	$y(\bar{p}\ e\ u)$	$d=(E)+(U)$
	3	"After-only"‡	?	$y(\bar{p}\ \bar{e}\ u)$	$d=(U)$
D	1	"Before-after"	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ e\ u)$	$d=(P)+(E)+(U)+(PEU)$
	2	"Before-after"‡	$y(\bar{p}\ \bar{e}\ \bar{u})$	$y(p\ \bar{e}\ u)$	$d=(P)+(U)$
	3	"After-only"‡	?	$y(\bar{p}\ \bar{e}\ u)$	$d=(U)$

NOTE.—None of the experiments sheds any light on the two-factor interactions.

* A question mark in this column indicates that the mean pretest score is not available for the group

† d = difference: mean posttest score minus observed or estimated mean pretest score.

‡ These groups are not exposed to the experimental stimulus.

THE FOUR-GROUP EXPERIMENT

The four-group experiment discussed in the literature has certain special features that deserve to be examined. First I shall treat the experiment as though it is composed of four single-group experiments; then I shall treat it as a half-replicate of a single 2^3 factorial. Table 7 defines the structure of the four-group experiment I shall discuss.

One way of treating this experiment as four single-group experiments is to consider the pretest and posttest mean scores supplied by group 1 as constituting a quarter-replicate of a 2^3 factorial involving P, E, and U; and those scores supplied by the second group, as constituting a half-replicate of a 2^2 experiment involving P and E; the posttest mean score from group 3 together with an estimate of the corresponding pretest mean score, as constituting a half-replicate of a 2^2 factorial involving E and U; and finally the corresponding figures for group 4, as a full-replicate of a 2^1 factorial involving just U. An alternative way of treating the above experiment as four single-group experiments is to treat it as four quarter-replicates of the same 2^3 factorial involving P, E, and U. Let us first see what the former approach leads to. Under that model, the equations involving the differences between the posttest mean scores and the observed or estimated pretest mean scores will be the following:

TABLE 7

STRUCTURE OF THE FOUR-GROUP EXPERIMENT

Group No.	Whether the Group Is Exposed to: P Pretest	E Experimental Stimulus	U Set of Uncontrolled Events
1	Yes	Yes	Yes
2	Yes	No	Yes
3	No	Yes	Yes
4	No	No	Yes

From group 1:

$$d_1 = y(p\ e\ u) - y(\bar{p}\ \bar{e}\ \bar{u}) = (P) + (E) + (U) + (PEU)\ ; \tag{11}$$

from group 2:

$$d_2 = y(p\ u) - y(\bar{p}\ \bar{u}) = (P) + (U)\ ; \tag{12}$$

from group 3, using estimated pretest mean score:

$$d_3 = y(e\ u) - y(\bar{e}\ \bar{u}) = (E) + (U)\ ; \tag{13}$$

and from group 4, again using estimated pretest mean score:

$$d_4 = y(u) - y(\bar{u}) = (U)\ . \tag{14}$$

One may use the observed pretest mean score in group 1 or group 2, or an average of those two means, as an estimate of $y(e\,u)$ and $y(u)$ in equations (13) and (14), respectively. Once these missing values are estimated, d_1, d_2, d_3, and d_4 will be known, and equations (11)–(14) may then be solved, leading to the following unique estimates for (P), (E), (U), and (PEU), the four unknowns in these equations:

$$(U) = d_4\,, \tag{15}$$

$$(E) = d_3 - d_4\,, \tag{16}$$

$$(P) = d_2 - d_4\,, \tag{17}$$

and

$$(PEU) = d_1 - d_2 - d_3 + d_4\,. \tag{18}$$

But, as mentioned above, it is one thing to arrive at unique estimates for the above four quantities, and another to attach some meaning to the estimates so obtained. This problem presents itself here too. Consider, for example, how we have arrived at the solution for (P) above. We note from equation (12) that d_2 gives the sum of (P) and (U). Simple algebra then suggests that if the value of (U) is known, then all that one needs to do to get an estimate of (P) is to subtract that value of (U) from the quantity that represents the sum of (P) and (U). It does not matter for this purpose from which source the value of (U) is obtained. In this particular case we borrow the estimate of (U) from the information supplied by group 4. But the point is that our inference concerning (P) is anchored on the experiment on group 2. That group, however, does not provide enough information for the main effect (P) to be interpreted in the presence of interaction (PU). Hence the solution obtained for (P) in the above fashion can be interpreted only if (PU) can be assumed to be negligible or nonexistent. Similar comments apply to the estimate for (E) obtained from equations (13) and (14). Thus, while the equation system (15)–(18) leads to unique solutions for (P), (E), (U), and (PEU), the solutions thus obtained for the main effects (P) and (E) cannot be interpreted without assuming that the interactions (PU) and (EU) are negligible or nonexistent. It is easy to miss this point if equations (11)–(14) are looked upon simply as a system of simultaneous equations and the interest becomes centered on solving for the four unknowns. This pitfall can be avoided if we treat the experiment under discussion as composed of four quarter-replicates of the same 2^3 factorial involving the factors P, E, and U. For, if we adopt this approach, we will have, instead of equations (11)–(14), the following equations:

$$d_1 = y(p\,e\,u) - y(\bar{p}\,\bar{e}\,\bar{u}) = (P) + (E) + (U) + (PEU)\,, \tag{11'}$$

$$d_2 = y(p\,\bar{e}\,u) - y(\bar{p}\,\bar{e}\,\bar{u}) = (P) + (U) - (PE) - (EU)\,, \tag{12'}$$

$$d_3 = y(\bar{p}\,e\,u) - y(\bar{p}\,\bar{e}\,\bar{u}) = (E) + (U) - (PE) - (PU)\,, \tag{13'}$$

and

$$d_4 = y(\bar{p}\,\bar{e}\,u) - y(\bar{p}\,\bar{e}\,\bar{u}) = (U) - (PU) - (EU) + (PEU)\,. \quad (14')$$

We have only four equations here, but the number of unknowns is seven. We can express any four of the unknowns in terms of the remaining three unknowns and the quantities d_1, d_2, d_3, and d_4. I shall not discuss all the possible ways of doing this, but I shall examine one particular case, which is of considerable interest. We shall solve the above equations for (P), (U), (E), and (PE) in terms of the interactions involving U and the four quantities d_1, d_2, d_3, and d_4. This particular case is of interest because in most situations U will be the problematic factor in the sense that one may not know what assumptions to make concerning the interactions involving it; under those circumstances, it will be of interest to know what inferences can be drawn about the main effects (P), (E), and (U), given one of several different sets of assumptions concerning interactions involving U.

From (11′)–(14′) we get the following solutions:

$$(P) = \tfrac{1}{2}(d_1 + d_2 - d_3 - d_4) - (PU)\,, \quad (15')$$

$$(E) = \tfrac{1}{2}(d_1 - d_2 + d_3 - d_4) - (EU)\,, \quad (16')$$

$$(U) = d_4 + (PU) + (EU) - (PEU)\,, \quad (17')$$

and

$$(PE) = \tfrac{1}{2}(d_1 - d_2 - d_3 + d_4) - (PEU)\,. \quad (18')$$

From equations (15′)–(18′), it can be seen that, whatever the status of the interactions, it is possible to attach practically useful meanings to the estimates of the effects of (P), (E), and (U). Consider, for example, the quantity

$$\tfrac{1}{2}(d_1 - d_2 + d_3 - d_4)\,, \quad (a)$$

which appears as the first part of the right hand side of (16′). This quantity essentially involves the following linear combination of the posttest mean scores of the four groups:

$$\tfrac{1}{2}[y(p\,e\,u) - y(p\,\bar{e}\,u) + y(\bar{p}\,e\,u) - y(\bar{p}\,\bar{e}\,u)]\,, \quad (a')$$

insofar as the corresponding expression in the observed (or estimated) pretest mean scores will be of negligible magnitude.

The expression (a′) is the average of the following two quantities:

$$y(p\,e\,u) - y(p\,\bar{e}\,u)\,, \quad (a'1)$$

$$y(\bar{p}\,e\,u) - y(\bar{p}\,\bar{e}\,u)\,. \quad (a'2)$$

The quantity (a′1) represents the effect of E when both P and U are present, and (a′2) represents the effect of E when U alone is present. Even if there is reason to believe that both the two-factor interactions (PE) and (PU) are present, the experimenter has enough information here to discuss

the effect of E. In that situation the experimenter would calculate (a′1) and (a′2) separately and interpret them as I have just done above. If, however, the interaction (PE) is known to be absent but (PU) is suspected to be present, the quantities (a′1) and (a′2) may be averaged as in (a), and the average so obtained may be interpreted as the effect of E when U is present. If (PE) is suspected to be present and (PU) is known to be absent, (a′1) and (a′2) will have to be calculated and interpreted separately. If neither (PE) nor (PU) is suspected to be present, then the expression (a′) may simply be interpreted as the main effect of E without making any distinction between the presence and absence of U.

The effect of P and U can be similarly estimated and interpreted, as can the estimate for (PE).

It may also be remarked that when all the interactions are negligible, the estimates obtained for the main effects (P) and (E) by considering the experiment as four quarter-replicates of a 2^3 factorial will be twice as precise as the corresponding estimates obtained by treating the experiment in the manner described earlier.

Let us now turn our attention to the analysis of the results of the four-group experiment by considering the posttest mean scores supplied by the four groups as a half-replicate of a 2^3 factorial. Using, as above, $y(p\,e\,u)$, $y(p\,\bar{e}\,u)$, $y(\bar{p}\,e\,u)$, and $y(\bar{p}\,\bar{e}\,u)$ to represent the posttest means from groups 1, 2, 3, and 4, respectively, we get the following equations:

$$\tfrac{1}{2}[y(p\,e\,u) + y(p\,\bar{e}\,u) - y(\bar{p}\,e\,u) - y(\bar{p}\,\bar{e}\,u)] = (P) + (PU)\,, \qquad (19)$$

$$\tfrac{1}{2}[y(p\,e\,u) - y(p\,\bar{e}\,u) + y(\bar{p}\,e\,u) - y(\bar{p}\,\bar{e}\,u)] = (E) + (EU)\,, \qquad (20)$$

and

$$\tfrac{1}{2}[y(p\,e\,u) - y(p\,\bar{e}\,u) - y(\bar{p}\,e\,u) + y(\bar{p}\,\bar{e}\,u)] = (PE) + (PEU)\,. \qquad (21)$$

If the interactions involving U can all be assumed to be negligible or nonexistent, the linear combinations of the posttest mean scores from the four groups shown on the left-hand side of (19) can be taken as an estimate of (P); the corresponding combination of the left-hand side of (20), as an estimate of (E); and the one on the left-hand side of (21), as an estimate of (PE). If the interaction (PE), (EU), or (PU) is present, the interpretation of the results will follow the same lines as described above for the analysis of the experiment as four quarter-replicates of a 2^3 factorial. One disadvantage of treating only the posttest mean score for estimating the main effects and interactions is that we do not have any way of estimating (U). The reader must have noticed that the half-replicate furnished by the four posttest mean scores has the main effect (U) as the defining contrast; that explains why this model fails to shed any light on that main effect. If main effect (U) is of interest, this model should not be used.

SUMMARY

This paper has given a unified treatment of the "before-after" and "after-only" designs and their combinations by viewing them as instances of fractional (or full) factorials. It has been shown that if these designs are looked at as fractional or full factorials, the experimenter may avoid certain pitfalls in the interpretation of his results. The present exposition of these designs also brings out the type of information each design is capable of providing and reveals under what conditions (assumptions) the results from each experiment can be given practically useful interpretations.

BIBLIOGRAPHIC NOTE

The "before-after" and "after-only" experimental designs are discussed in almost all methods textbooks (see, e.g., Selltiz et al. 1959). Campbell and Stanley (1966) give an excellent treatment of these designs and an extensive bibliography. In their discussion of these experimental designs, Campbell and Stanley have given attention to many relevant topics such as extra-design hazards, factors jeopardizing external validity, etc. Ross and Smith (1965, 1968) have given a "formal and exhaustive coverage of one-, two-, three-, and four-group designs."

Among the statistical textbooks, the following contain extensive treatment of factorial designs in full and fractional replications: Cochran and Cox (1957), Davies (1956), Kempthorne (1952), and Kirk (1968). The following works may also be of interest, although they deal with the application of experimental designs to observational studies: Belson (1967), Cochran (1965), Emmett (1966), and Keyfitz (1953).

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On the Estimation of Relationships Involving Qualitative Variables[1]

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This article is concerned with the specification and estimation of relationships whose dependent variable is qualitative in nature (such as "yes" or "no"). It discusses logit equations with and without interaction, and the estimation procedure is generalized least squares. Part I deals with dependent variables that take only two values, part II with variables taking more than two values, and part III describes informational measures for the explanatory power of the determining factors. The discussion of more advanced technical matters is contained in various appendixes.

I. LOGIT SPECIFICATIONS WITH AND WITHOUT INTERACTION

1. Introduction

In chapter 6 of his *Introduction to Mathematical Sociology*, Professor J. S. Coleman rightly stresses the different states of development of continuous multivariate analysis and the analysis of qualitative data. He proposes certain techniques to handle such data and illustrates them by means of several examples, some of which are reproduced here in tables 1 through 4. The upper half of each table contains the number of cases observed in the relevant category; the lower half specifies the proportion in which the response is positive.

a) In table 1, the positive response is a soldier's expressed preference for a Southern camp.[2] There are three determining factors: the soldier's region of origin (whether he comes from the North or the South), his race, and the location of his present camp (North or South).

b) The positive response considered in table 2 is a Negro soldier's expressed desire to be in a combat outfit. The determining factors are also three in number, but the third takes three values rather than two: attitude toward racial separation (against or not against), region of origin (North or South), and education (grade school only, some high school, or high school completed).

[1] The author is indebted to his colleagues Leo Goodman, Harry Roberts, and Gordon Antelman for their willingness to listen to his problems, and to John Paulus who programmed the computations. The work reported in this article was partly financed by the National Science Foundation under grant GS-2607.

[2] Including a preference to stay in the present camp if it is located in the South. The soldiers who were undecided or did not name a camp are eliminated. Their numbers are given in the original source (Stouffer et al. 1949, p. 553) only in percentage form, which may lead to rounding errors.

TABLE 1

PREFERENCE FOR SOUTHERN CAMP DETERMINED BY REGION OF ORIGIN, RACE, AND LOCATION OF PRESENT CAMP

Present Camp	Northern Men		Southern Men	
	Negro	White	Negro	White
	Number of Cases Observed			
North	423	1,117	653	280
South	1,126	1,384	2,093	961
	Proportion of Positive Responses			
North	0.085	0.145	0 414	0 628
South	0 222	0.369	0 819	0.905

TABLE 2

PREFERENCE TO BE IN A COMBAT OUTFIT DETERMINED BY ATTITUDE TOWARD RACIAL SEPARATION, REGION OF ORIGIN, AND EDUCATION

Education	Not against Racial Separation		Against Racial Separation	
	South	North	South	North
	Number of Cases Observed			
Grade school only	2,051	518	1,050	600
Some high school	382	320	349	489
High school completed	351	245	478	609
	Proportion of Positive Responses			
Grade school only	0 09	0 14	0 13	0 19
Some high school	0 15	0 25	0 16	0 30
High school completed	0 17	0 28	0 21	0 31

TABLE 3

PROPORTION OF CORRECT ANSWERS DETERMINED BY INTELLIGENCE AND INSTRUCTIONAL INPUT

Intelligence Level	No Movie	Movie Only	Movie with Review	Movie with Introduction
	Number of Cases Observed			
Low	153	153	153	153
High	100	100	100	100
	Proportion of Positive Responses			
Low	0.338	0.380	0.414	0.430
High	0.462	0 567	0.586	0 604

c) Table 3 concerns the proportion of correct replies made by soldiers to a number of true-false questions. Here there are two determining factors, one of which is the soldier's intelligence level as measured by his score (high or low) in the Army General Classification Test (AGCT). The other factor is the degree to which the soldier was introduced to the subject by means of a movie. It takes four values: no movie, movie only, movie with a subsequent review, and movie preceded by an introduction.[3]

d) The positive response of table 4 is a vote for the progressive candidate in the election of the president of a printers' union. The two determining factors are the political attitude of the voter (liberal or conservative) and the question of whether he is high or low in knowledge of the issues of the campaign.

TABLE 4

PROPORTION VOTING FOR PROGRESSIVE CANDIDATE DETERMINED BY POLITICAL ATTITUDE AND DEGREE OF KNOWLEDGE

Knowledge	Conservatives	Liberals
	Number of Cases Observed	
Low	87	59
High	36	80
	Proportion of Positive Responses	
Low	0 667	0 746
High	0 389	0.888

In all these cases there appears to be a systematic relationship between the frequency of positive response and the values taken by the determining factors. Sometimes the range of variation of the frequency of positive response is very substantial. For example, table 2 shows that less than 10 percent of the Northern Negroes who are in the Northern camp would prefer to go South, whereas more than 90 percent of the Southern whites who are in a Southern camp do prefer the South. At the same time it is obvious that a very large sample is needed in order that such relative frequencies can be precise estimates of the corresponding probabilities, particularly when the number of determining factors is not very small. A model which describes these probabilities in terms of a smaller number of parameters is therefore in order. The problem is especially important be-

[3] For each of these four levels of instructional input there were 253 soldiers who answered the questions (see Hovland and others p. 144, footnote). It is unknown how many fall under the high and the low intelligence groups. The numbers chosen (100 and 153) are in approximate accordance with the AGCT grade distribution of the more than 8 million men who were processed through the reception centers in 1940–44 (see Marquis [1945], particularly table 3 on p. 764).

cause tables of the type presented occur on such a large scale in applied sociology and related areas.

The particular model proposed by Coleman is linear in the probabilities. This approach has the virtue of simplicity but the disadvantage that it cannot guarantee that the probabilities implied by the model are constrained to the interval from 0 to 1.[4] As an adjustment method he proposes either least squares or weighted least squares with weights determined by the estimated sampling variances of the observed relative frequencies. The latter variant is to be preferred from the standpoint of efficient estimation, but it was rightly stressed by Boyle that this leads to difficulties when an observed relative frequency is 0 or 1 or close to these limits.[5]

The first objective of this article is to show that a convenient tool for this area of analysis is the logit concept[6] and that in several cases success can be obtained by means of logit equations of some form. In parts II and III, I will extend the approach to the case in which the dependent variable takes three or more values rather than just two (a positive or a negative response), and I will also formulate measures for the degree to which the determining factors account for the phenomenon which they serve to describe.

2. Linear Logit Relations

In tables 1 and 2 we have three determining factors, to be indicated by X, Y, and Z. We shall write P_{jkl} for the conditional probability of a positive response given that the conditioning factors (X, Y, Z) take the values $X = X_j$, $Y = Y_k$, and $Z = Z_l$. Thus P_{111} for table 1 stands for the conditional probability that a soldier prefers a camp in the South given that he comes from the North ($X = X_1$), that he is a Negro ($Y = Y_1$), and that he is presently in a Northern camp ($Z = Z_1$). Similarly, P_{123} for table 2 stands for the conditional probability that a Negro soldier prefers to be in a combat outfit when he is not against racial separation ($X = X_1$), when he comes from the North ($Y = Y_2$), and when he is a high school graduate ($Z = Z_3$).

The problem is thus to formulate a model, preferably involving few parameters, which describes P_{jkl} in terms of its three determining factors

[4] For example, it is not possible to exclude the possibility that r defined in equation (1.11) on Coleman's p. 196 is negative, and this r is one of the adjusted probabilities.

[5] See R. P. Boyle 1966, p. 846.

[6] The name of Joseph Berkson is particularly associated with this concept. Part of what follows in this article is closely related to the approach described in his "Application of Minimum Logit χ^2 Estimate to a Problem of Grizzle with a Notation on the Problem of 'No Interaction.'" (The reader may want to consult the references at the end of his article.) Similar approaches are also considered in chap. 3 of my *Economics and Information Theory*.

The linear model is the simplest, but a transformation of the probability is needed if we want to ensure that negative values and values larger than 1 cannot occur. Consider then the ratio of P_{jkl} to $1 - P_{jkl}$, the odds in favor of a positive response under the condition (X_j, Y_k, Z_l). These odds increase from 0 to ∞ as the probability increases from 0 to 1. Hence the natural logarithm of these odds, known as the logit of a positive response,

$$L_{jkl} = \log P_{jkl}/(1 - P_{jkl}) , \tag{2.1}$$

increases from $-\infty$ to ∞. A picture of the logit as a function of the probability is shown in figure 1. The curve intersects the horizontal axis when
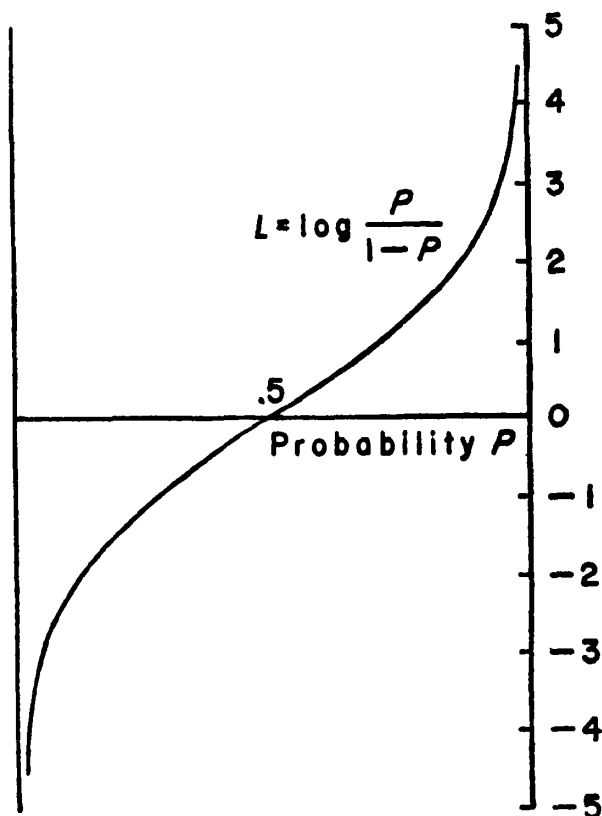
FIG. 1.—The logit as a function of the probability

the probability is ½, and the slope of the curve takes the smallest value (4) in that point.

The linear logit specification for the case of tables 1 and 2 is

$$L_{jkl}^{*} = \alpha + \beta_j + \gamma_k + \delta_l , \tag{2.2}$$

where β_j, γ_k, and δ_l are parameters which measure the effects of the three

successive determining factors on the logit of a positive response. Without loss of generality we may specify:

$$\beta_1 = \gamma_1 = \delta_1 = 0\,, \tag{2.3}$$

in which case $L_{111} = \alpha$. For table 2 this is the logit of a preference to be in a combat outfit among Southern soldiers with grade school only who are not against racial separation.

Note that the logit is unbounded, so that the right-hand side of (2.2) may take any real values without violating any bounds to which the left-hand side is subject. This is a considerable advantage of the logit over the probability. Note further that, when the probability of figure 1 approaches 0 or 1, the logit is subject to very large (downward or upward) changes. Conversely, any given change in the logit has much less impact on the probability P when P is close to 0 or 1 than when it is around $\frac{1}{2}$. This feature is highly plausible with respect to the linear logit specification (2.2). To illustrate this statement, consider the Southern men who are presently in a Northern camp (table 1). The observed frequency of preference for a Southern camp is 0.414 for Negro soldiers and 0.628 for white soldiers. Hence, being white rather than Negro (supposing that such a change were possible) induces 21.4 percent of the soldiers to prefer the South to the North. But such a change would be impossible for men who are presently in a Southern camp, since the preference frequency is as high as 0.819 among Negroes. Still, such a shift would be needed if one were to attempt to justify a linear relation for the probability P_{jkl}. The actual increase is obviously much smaller (from 0.819 to 0.905). This is in accordance with (2.2), which implies that when the logit is large and becomes still larger (as is the case when we shift from Southern Negroes in Southern camps to Southern whites in Southern camps), it does raise the probability, but it does so by a moderate amount.

3. Estimation of Linear Logit Relations

When we attempt to estimate the parameters of the logit relation (2.2) on the basis of the observed relative frequencies of tables 1 and 2, we must face the fact that L_{jkl} as defined in (2.1) depends on the probability P_{jkl}, which is unknown. So we estimate P_{jkl} by the corresponding relative frequency in these tables, to be denoted by f_{jkl}. The implied logit estimate is

$$\bar{L}_{jkl} = \log f_{jkl}/(1 - f_{jkl})\,. \tag{3.1}$$

These estimates will not satisfy equation (2.2) exactly. However, if it is the case that the f_{jkl}s for different subscript combinations are mutually independent and that each of them is the result of independent random drawings from a binomial population, then one can apply a weighted least-

squares procedure which is fairly simple. Details are given in Appendix A for the case of table 1 and in Appendix B for that of table 2. A nontechnical outline follows in the next two paragraphs.

Write n_{jkl} for the number of observations on which the relative frequency f_{jkl} is based (the relevant number in the upper halves of tables 1 and 2). Then it can be shown that for n_{jkl} sufficiently large, the estimator $\hat{L}_{jkl}$ of the true logit L_{jkl} has an (asymptotic) variance which is approximately equal to the reciprocal of w_{jkl}, defined as[7]

$$w_{jkl} = n_{jkl} f_{jkl}(1 - f_{jkl}) . \tag{3.2}$$

The weighted least-squares procedure uses these w's as weights. Thus, given the value of f_{jkl}, more weight is given to cells with a larger number of observations (n_{jkl}). Furthermore, the weight is 0 for all cells which have a relative frequency of either 0 or 1. This is important, because the logit estimate (3.1) is infinitely large in these cases and hence cannot be handled in the computations. Similarly, given n_{jkl}, the weight is small when f_{jkl} is close to 0 or to 1. This is plausible too, because $\hat{L}_{jkl}$ takes large—negative or positive—values under these conditions and is highly sensitive to small changes in f_{jkl} (see fig. 1). It stands to reason that little weight ought to be given to observations which are highly unstable.

The weighted least-squares method based on the w's of (3.2) leads to a set of linear estimation equations equal in number to the unknown parameters of (2.2). Taking account of the constraint (2.3), we have four such parameters in the case of table 1: α, β_2, γ_2, and δ_2; for table 2 there is a fifth parameter (δ_3) because Z (education) takes three values rather than two. To solve the estimation equations one has to invert a matrix, and the inverse is an estimated asymptotic covariance matrix of the parameter estimates from which asymptotic standard errors can be computed by taking the square roots of the diagonal elements.

The parameter estimates for table 1 (with standard errors in parentheses) are as follows:

$\hat{\alpha} = -2.74$ (0.08): the logit estimate of an expressed preference for a Southern camp among Northern Negroes who are presently in a Northern camp;

$\hat{\beta}_2 = 2.60$ (0.06): the estimated effect on the logit of coming from the South rather than the North;

$\hat{\gamma}_2 = 0.76$ (0.06): the estimated effect of being white rather than Negro;

$\hat{\delta}_2 = 1.54$ (0.06): the estimated effect of being presently in a Southern rather than a Northern camp.

[7] In fact, the normal asymptotic distribution of the logit estimator is approximated rather closely even when the cell frequencies (n_{jkl}) are rather small. This was argued by D. V. Lindley in a different (Bayesian) context (see Lindley 1964).

For table 2:

$\bar{\alpha} = -2.29$ (0.06): the logit estimate of an expressed preference for a combat outfit among Southern Negro soldiers with grade school who are not against racial separation;

$\bar{\beta}_2 = 0.28$ (0.07): the estimated effect of being against instead of not against racial separation;

$\bar{\gamma}_2 = 0.57$ (0.07): the estimated effect of coming from the North rather than the South;

$\bar{\delta}_2 = 0.54$ (0.08): the estimated effect of having some high school rather than just grade school education;

$\bar{\delta}_3 = 0.68$ (0.08): the estimated effect of having completed high school rather than having just grade school education.

The statistical significance of the differences between the various effects can be evaluated by means of the covariance matrix of the estimates. For example, in the case of table 2, the effect on the logit of being a high school graduate rather than having some high school is measured by $\delta_3 - \delta_2$. The point estimate of this difference is $\bar{\delta}_3 - \bar{\delta}_2 = 0.14$ and its asymptotic standard error is 0.085, so that the effect is only marginally significant at the conventional standards. This standard error is determined as

$$10^{-2}\sqrt{64.83 + 58.53 - 2(25.82)} = 0.085 \,,$$

where the figures under the square root sign are the estimated asymptotic variances and covariance of $\bar{\delta}_2$ and $\bar{\delta}_3$. These are the elements in the lower right-hand corner of the estimated asymptotic covariance matrix:

$$10^{-4}\begin{bmatrix} 35.59 & -18.12 & -12.17 & -17.42 & -16.18 \\ \cdots & 42.54 & -6.32 & -2.53 & -7.09 \\ \cdot & & 43.36 & -11.48 & -8.78 \\ \cdot\cdot & \cdot\cdot & \cdot\;\cdot & 64.83 & 25.82 \\ \cdots & \cdots & \cdots & \cdots & 58.53 \end{bmatrix} \begin{matrix} \alpha_2 \\ \beta_2 \\ \gamma_2 \\ \delta_2 \\ \delta_3 \end{matrix} \qquad (3.3)$$

The elements below the main diagonal follow from the symmetry of the matrix.

4. Interaction

The linear logit specification assumes that the effect of each determining factor on the logit is the same whatever values the other factors may take. There are situations in which this assumption is not realistic, so that the approach has to be modified. In contrast to the corresponding situation for quantitative (continuous) data, the present case of qualitative data is rather simple as regards the testing of this assumption. It can be done by comparing the observed frequencies f_{jkl} with the corresponding probability

estimates which are implied by the logit equation. Take (2.1) and solve it for P_{jkl}:

$$P_{jkl} = (1 + e^{-L_{jkl}})^{-1} . \tag{4.1}$$

Equation (2.2) expresses L_{jkl} in terms of the parameters which were estimated in section 3. By substituting these estimates into the right-hand side of (2.2) we obtain the logit estimates implied by the parameter estimates, and by subsequent substitution of these logit estimates into the right-hand side of (4.1) we obtain the probability estimates, to be denoted by $\bar{P}_{jkl}$, which are implied by the linear logit specification.

TABLE 5

ESTIMATED CONDITIONAL PROBABILITIES FOR TABLE 1

Present Camp	Northern Men: Negro	Northern Men: White	Southern Men: Negro	Southern Men: White
	Observed Relative Frequencies			
North	0 085	0 145	0 414	0.628
South	0 222	0.369	0.819	0 905
	Estimated Probabilities (No Interaction)			
North	061	121	.467	.651
South	232	391	.803	.897
	Discrepancies			
North	.024	024	− .053	− 023
South	− 010	− 022	016	008
	Estimated Probabilities (With Interaction)			
North	077	148	.423	.606
South	220	371	819	.905
	Discrepancies			
North	0.008	−0.003	−0.009	0.022
South	0 002	−0 002	0.000	0.000

In table 5,[8] this procedure is applied to the data of table 1. The first two lines reproduce the relative frequencies (f_{jkl}) and the next two give the probability estimates $\bar{P}_{jkl}$. Below these are two lines containing the discrepancies $f_{jkl} - \bar{P}_{jkl}$. They turn out to be positive for Northern men in Northern camps and for Southern men in Southern camps, and negative in all cases in which men are in camps located in an area other than that of their origin. Equivalently, the model predicts a larger effect of the location of the present camp for Northern men than the data indicate, and the

[8] See table 7 (sec. 6) for the data of table 2.

situation is just the opposite for Southern men. This may be illustrated by taking logit differences for the frequencies on the first two lines of table 5. The effect of a present camp in the South rather than the North is for Northern men:[9]

$$\hat{L}_{112} - \hat{L}_{111} = 1.12 \text{ (Negroes)} ; \quad \hat{L}_{122} - \hat{L}_{121} = 1.24 \text{ (whites)} ; \quad (4.2)$$

and for Southern men:

$$\hat{L}_{212} - \hat{L}_{211} = 1.86 \text{ (Negroes)} ; \quad \hat{L}_{222} - \hat{L}_{221} = 1.73 \text{ (whites)} . \quad (4.3)$$

This suggests that the present camp effect is about 50 percent larger for Southerners than for Northerners. In the approach of the previous section, the effect of the location of the present camp was postulated to be equal for both groups, and the estimated effect ($\bar{\delta}_2 = 1.54$) was about halfway between the figures in (4.2) and (4.3), as could be expected; but the results reported here suggest that it is appropriate to introduce an interaction term for the region of origin (X) and the location of the present camp (Z).

Consider then the following logit specification:

$$L_{jkl} = \alpha + \beta_{jl} + \gamma_k , \quad (4.4)$$

where β_{jl} measures the combined effect of (X_j, Z_l) on the logit. We specify $\beta_{11} = \gamma_1 = 0$, so that α stands (as before) for the logit of an expressed preference for a Southern camp among Northern Negro men who are presently in Northern camps. There are five unknown parameters (α, β_{12}, β_{21}, β_{22}, γ_2), and their estimation is a straightforward extension of the procedure of the previous section (see Appendix C). The point estimates and standard errors of α and γ_2 are -2.49 (0.09) and 0.74 (0.06), respectively; their values are changed under the interaction specification (4.4), but their interpretation is not. For the β's we obtain:

$\bar{\beta}_{12} = 1.22$ (0.09): the estimated effect on the logit of an expressed preference for a Southern camp, for Northern men, of being presently in a Southern rather than a Northern camp;

$\bar{\beta}_{21} = 2.18$ (0.11): the estimated effect, for men who are presently in a Northern camp, of being of Southern rather than Northern origin;

$\bar{\beta}_{22} = 4.00$ (0.10): the estimated combined effect of being of Southern rather than Northern origin and of presently being in a Southern instead of a Northern camp.

The effect of presently being in a Southern rather than a Northern camp for Southerners is $L_{2k2} - L_{2k1} = \beta_{22} - \beta_{21}$. The estimate is $\bar{\beta}_{22} - \bar{\beta}_{21} = 1.82$ with a standard error of 0.08. This effect exceeds the corresponding effect for Northerners by $\beta_{22} - \beta_{21} - \beta_{12}$, which is estimated as 0.60 with a standard error of 0.12, so that the excess must be regarded as significantly

[9] A convenient table expressing logits in terms of probabilities or relative frequencies is given in Theil (1967), pp. 458–62.

ositive. The estimated probabilities $\hat{P}_{jkl}$ based on (4.4) and the correspond-
ıg discrepancies $f_{jkl} - \hat{P}_{jkl}$ are shown on the last four lines of table 5.
'hey indicate that the interaction specification leads to a considerably
etter fit.

ı. Other Cases of Interaction

'he simplest way to test for interaction is by directly inspecting the logits. Table 6, which is based on table 3, provides an example. The linear logit pecification with no interaction does not work very well in this case, ecause the logit increase from "no movie" to "movie only" is 0.42 for the igh-intelligence group and only 0.18 for the low-intelligence group. On he other hand, the subsequent increases from "movie only" to "movie with introduction" are closer to each other (0.15 and 0.21). These results seem reasonable. It stands to reason that the high-intelligence group

TABLE 6

LOGITS OF RELATIVE FREQUENCIES OF TABLE 3

Intelligence Level	No Movie	Movie Only	Movie with Review	Movie with Introduction
Low.......	−0.672	−0 490	−0.347	−0 282
High.......	−0.152	0 270	0.347	0.422

makes a larger score when no movie is shown and also that its gain from the movie is larger; one can even argue that it is not surprising that further instruction (an introduction or a review) must have a declining effect because much of it amounts to repetition which is of limited use for intelligent persons. The last consideration would explain the rather small gain from "movie only" to "movie with introduction" for the high-intelligence group relative to the corresponding gain of the other group.

The difficulty is that the sample sizes shown in table 3 are too small to draw interesting conclusions which are statistically significant. In fact, the effect of the movie plus introduction relative to "no movie" is only marginally significant for the high-intelligence group. Consider the null hypothesis that the true score is 50 percent in both cases and apply the usual binomial model. Then, with 100 observations, the variance of a sample frequency is 0.0025 and the variance of the difference of two independent frequencies is 0.005, so that the standard error of this difference is about 0.07. Table 3 shows that the observed difference of the score for "movie with introduction" and that of "no movie" is about 0.14 for the high-intelligence group, and hence about twice the standard error. Since the differences are smaller for the low-intelligence group, it seems that the data do not really enable us to say very much about the productivity of the various forms of in-

structional input. One exception should be mentioned, though. If the analyst really believes in the arguments set forth in the previous paragraph, he may want to pursue a Bayesian approach by formalizing these arguments in terms of a prior distribution. This, however, is beyond the scope of this article.

The sample sizes of table 4 are even smaller than those of table 3. We shall, nevertheless, consider this case in some detail because the model to be applied will reveal an interesting feature which distinguishes this case from the classical least-squares approach for quantitative data. This model involves as many unknown parameters as there are cell frequencies (four), so that there are zero degrees of freedom. In the classical least-squares
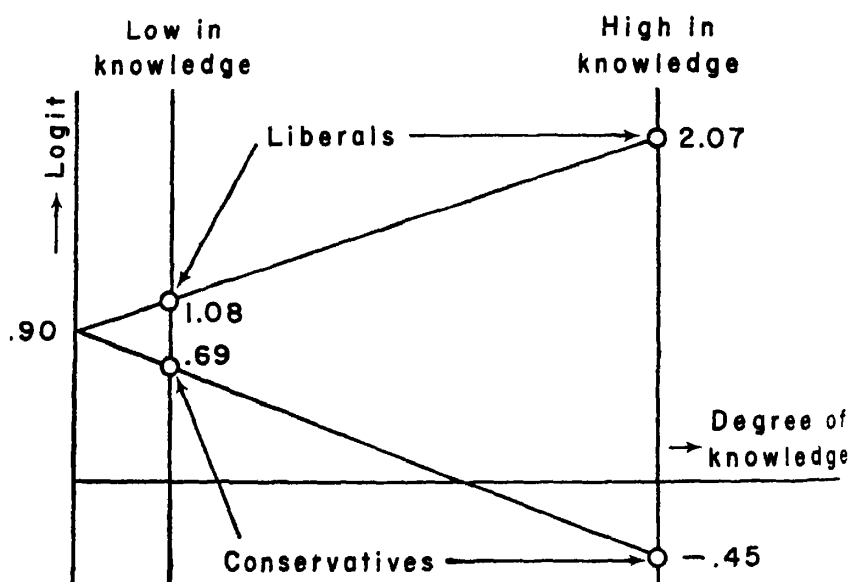
FIG. 2.—A logit picture of the frequencies of table 4

setup it is then possible to obtain point estimates of the parameters, but no standard errors. Here it will be possible to obtain both in spite of the zero number of degrees of freedom.

The case of table 4 concerns what Coleman calls an "intensifier attribute": liberals are more inclined to give their vote to a liberal candidate than conservatives are, but the difference is small when knowledge is low and it is substantial only when knowledge is high. Thus, knowledge of the issues acts as an intensifier of the difference between the behavior patterns of the two groups. A picture of the four relative frequencies in logit form is given in figure 2. The logits are measured vertically and the degree of knowledge horizontally. The four observations are indicated by small

circles and the two nonvertical straight lines through them serve to describe the effect of knowledge on the logit under the assumption that this effect is additive. The underlying relationship is

$$L_{jk} = \alpha + \beta_j \gamma_k , \tag{5.1}$$

where j indicates the political attitude ($j = 1$, conservative; $j = 2$, liberal) and k the degree of knowledge ($k = 1$, low; $k = 2$, high). We may normalize so that $\gamma_2 = 1$. Thus there are four unknown parameters: α, β_1, β_2, and γ_1, so that there are indeed zero degrees of freedom. It is therefore impossible to test the validity of the specification (5.1), but if one is willing to accept it he can answer some questions which he may find of interest, such as "how low is 'low in knowledge' relative to 'high in knowledge'?" The answer is γ_1 (given the normalization $\gamma_2 = 1$). Since $L_{21} - L_{11} = (\beta_2 - \beta_1)\gamma_1$ and $L_{22} - L_{12} = \beta_2 - \beta_1$, we can estimate γ_1 as the ratio of these two logit differences:

$$\hat{\gamma}_1 = (\hat{L}_{21} - \hat{L}_{11})/(\hat{L}_{22} - \hat{L}_{12}) = 0.15 . \tag{5.2}$$

The standard error of this estimate (see Appendix D) is 0.15. This is on the large side, which is the obvious consequence of the fact that the underlying sample sizes shown in table 4 are so small.

6. Testing the Validity of a Logit Specification

When the number of degrees of freedom is positive, one may want to test the validity of the logit specification. A standard χ^2 test is available, based on the discrepancies between the observed relative frequencies and the probability estimates which are implied by the specification to be tested. These discrepancies are given in table 5 for the case of table 1 and in table 7 for the case of table 2. To test the hypothesis that the observed relative frequency f_{jkl} of the cell (j, k, l) has been generated by a mechanism whose probability of success is equal to some given number P_{jkl}, one computes

$$\begin{aligned} [n_{jkl}(f_{jkl} - P_{jkl})^2]/P_{jkl} + \{n_{jkl}[1 - f_{jkl} - (1 - P_{jkl})]^2\}/1 - P_{jkl} \\ = [n_{jkl}(f_{jkl} - P_{jkl})^2]/[P_{jkl}(1 - P_{jkl})] , \end{aligned} \tag{6.1}$$

which is distributed as χ^2 with 1 df if the null hypothesis is true. Since the f's with different subscript combinations are independent by assumption, the sum of the ratios (6.1),

$$\sum_j \sum_k \sum_l [n_{jkl}(f_{jkl} - P_{jkl})^2]/[P_{jkl}(1 - P_{jkl})] , \tag{6.2}$$

is distributed as χ^2 with a number of degrees of freedom equal to the total number of cells. This is 8 df for the case of table 1 and 12 df for that of table 2.

However, if we are interested in the validity of the logit specification

chosen rather than in a set of P_{jkl}s formulated independently of the data, we have to substitute in (6.2) the probability estimates $\hat{P}_{jkl}$ which are implied by the data and the logit equation. It is shown in Appendix E that under the assumption of sufficiently large samples, the expression (6.2) thus modified is approximately χ^2, with a number of degrees of freedom equal to the total number of cells minus the number of coefficients adjusted in the logit equation. This is 4 df for the case of table 1 when no interaction term is introduced, 3 df when there is such a term, and 7 df for the case of table 2. The three successive χ^2s are 25.7, 1.37, and 5.02, the first of which is highly significant whereas the last two indicate a satisfactory agreement of the model and the data.

TABLE 7

ESTIMATED CONDITIONAL PROBABILITIES FOR TABLE 2

Education	Not against Racial Separation		Against Racial Separation	
	South	North	South	North
	Observed Relative Frequencies			
Grade school only	0 09	0.14	0.13	0.19
Some high school.	0.15	0 25	0 16	0 30
High school completed. . . .	0 17	0 28	0.21	0 31
	Estimated Probabilities			
Grade school only	092	152	.119	193
Some high school.	149	236	188	291
High school completed . .	167	.261	.210	320
	Discrepancies			
Grade school only.	−0 002	−0.012	0 011	−0 003
Some high school.	0 001	0.014	−0.028	0 009
High school completed	0 003	0.019	0.000	−0 010

We must conclude by noting that several of our numerical results would probably have been somewhat different if more precise data had been available. For example, the observed relative frequencies shown in the last table are known to two decimal places only, and it seems unlikely that the third decimal places of the corresponding discrepancies in that table would be all unchanged if the source had provided more accuracy.[10] It is understandable that researchers are not excited at the idea of suggesting more accuracy than their samples can guarantee, but insofar as there is a possibility that their results will be used as basic data by others they have an additional responsibility. By far the best procedure is to publish the original (absolute) numbers in addition to the frequency percentages.

[10] See also footnotes 1 and 2 above.

II. CONDITIONAL LOGIT SPECIFICATIONS IN THE MULTIPLE RESPONSE CASE

7. Introduction

The previous developments are limited to the case in which the response is either positive or not positive. The question arises whether the approach can be extended to cases in which the response is "polytomous" rather than dichotomous. An example is given in table 8, which concerns the evaluation of military policemen by Negro soldiers in World War II.[11] The first two lines deal with Negro MPs and contain four cells, each of which consists of four numbers. The number before the parentheses is the number of observations, and the numbers within the parentheses are,

TABLE 8

EVALUATION OF MILITARY POLICEMEN BY NEGRO SOLDIERS

Camp	Northern Men	Southern Men
	Evaluation of Negro MPs	
North...	464 (0.078, 0.511, 0 411)	801 (0.076, 0.413, 0.511)
South...	1279 (0.163, 0.554, 0.283)	2392 (0.102, 0 455, 0.443)
	Evaluation of White MPs	
North..	459 (0.292, 0.450, 0.258)	766 (0.261, 0.409, 0 330)
South .	1237 (0 438, 0 416, 0 146)	2419 (0 314, 0 416, 0 270)

successively, the proportion of those who regard the MPs "unfair most of the time," of those who regard them as "about half fair, half unfair," and of those who regard them as "usually fair." The upper-left cell thus indicates that there were 464 Northern men in Northern camps who gave a verdict, which was unfair in 7.8 percent of all cases, fair in 41.1 percent, and "halfway" in the remaining 51.1 percent. The last two lines of the table contain similar data on the evaluation of white MPs.

Table 8 thus displays the evaluation of MPs by Negro soldiers as a function of two characteristics of these soldiers: their region of origin (North or South) and the location of their present camp (North or South). Hence there are two determining factors as in the case of tables 3 and 4, but there is a difference in that the evaluation takes the form of three probabilities. The objective of the next four sections is to extend the logit

[11] The data are taken from Stouffer et al. (1949, p. 560). The respondents who were undecided were eliminated. Since the frequencies in this source are given as multiples of 1 percent, the third decimal places of the relative frequencies of table 8 may be in error.

specification for such cases in which there are three (or even more) possible responses rather than just two.[12]

8. Conditional Logit Specifications

We shall indicate the three relative frequencies of each cell of table 8 by $f_{r|jk}$, where r refers to the verdict ($r = 1$, usually unfair; $r = 2$, halfway; $r = 3$, usually fair) and j and k to the determining factors: $j = 1$ for Northern men, $j = 2$ for Southern men, $k = 1$ for men who are presently in a Northern camp, and $k = 2$ for those in a Southern camp. The corresponding number of observations will be denoted by n_{jk}.

The observed relative frequency $f_{r|jk}$ is the sample counterpart of the conditional probability $P_{r|jk}$ of the rth response, given $X = X_j$ (for the region of origin) and $Y = Y_k$ (for the location of the camp). One could contemplate the application of a linear logit equation for each r, so that the logarithm of the ratio of $P_{r|jk}$ to $1 - P_{r|jk}$ becomes a linear function of unknown parameters, but this leads to inconsistencies when the procedure is applied to each value of r.[13] A more promising approach is to look at pairs of responses, say the rth and the sth ($r \neq s$). Under the condition that the response is either the rth or the sth, the logarithm of the odds in favor of the rth response is $\log (P_{r|jk}/P_{s|jk})$. We shall call this logarithmic ratio the *conditional logit* favoring the rth response relative to the sth, the condition being the one just mentioned.[14] It should be noted at the outset that equations for such conditional logits determine only the ratios of the probabilities. Their absolute values are then determined by the condition that the sum over r of $P_{r|jk}$ equal 1.

A linear specification for a conditional logit is of the form

$$\log P_{r|jk}/P_{s|jk} = \alpha_{rs} + \beta_{jrs} + \gamma_{krs} \,. \tag{8.1}$$

As in the case (2.1)-(2.2), this specification describes the effects of the determining factors in an additive manner with no interaction. However, the parameters in the right-hand side of (8.1) are subject to constraints. Consider this equation for the conditional odds $P_{s|jk}/P_{t|jk}$:

$$\log P_{s|jk}/P_{t|jk} = \alpha_{st} + \beta_{jst} + \gamma_{kst} \,,$$

[12] The formulation of this generalization can be found in my "A Multinomial Extension of the Linear Logit Model," but this article is not concerned with the statistical implementation of the model.

[13] Each of these equations can be rewritten such that $P_{r|jk}$ becomes an explicit function of the parameters of the corresponding logit equation. But the sum over r of $P_{r|jk}$ is necessarily 1, and there is no guarantee that the sum of the corresponding functions of the parameters will be equal to 1.

[14] Plus, of course, the condition $X = X_j$, $Y = Y_k$.

and add this equation to (8.1):

$$\log P_{r|jk}/P_{s|jk} + \log P_{s|jk}/P_{t|jk}$$
$$= (\alpha_{rs} + \alpha_{st}) + (\beta_{jrs} + \beta_{jst}) + (\gamma_{krs} + \gamma_{kst}) .$$

But the left-hand side is the logarithm of the conditional odds $P_{r|jk}/P_{t|jk}$, for which the equation is:

$$\log P_{r|jk}/P_{t|jk} = \alpha_{rt} + \beta_{jrt} + \gamma_{krt} .$$

The implication is:

$$\alpha_{rs} + \alpha_{st} = \alpha_{rt}$$
$$\beta_{jrs} + \beta_{jst} = \beta_{jrt} \qquad (8.2)$$
$$\gamma_{krs} + \gamma_{kst} = \gamma_{krt} .$$

These "circularity conditions" imply that α_{rs} can be written in the form $\alpha_r - \alpha_s$ for appropriate values of the single-subscript α's, and similarly for the β's and γ's. We can therefore write (8.1) in the form

$$\log P_{r|jk}/P_{s|jk} = (\alpha_r - \alpha_s) + (\beta_{jr} - \beta_{js}) + (\gamma_{kr} - \gamma_{ks}) . \qquad (8.3)$$

It is readily seen that it is sufficient to consider equation (8.3) for only one value of s, say $s = 1$, and for all values r different from this s value; the equations for all other (r, s) combinations can be obtained from these. In addition, the right-hand side of (8.3) shows that only the differences of the α's matter (similarly the β's for each j and the γ's for each k). We may therefore normalize as follows:

$$\alpha_1 = \beta_{j1} = \gamma_{k1} = 0 , \qquad (8.4)$$

for each j and k.

The relevant equations for the case of table 8 are thus:

$$\log P_{2|jk}/P_{1|jk} = \alpha_2 + \beta_{j2} + \gamma_{k2} , \qquad (8.5)$$

$$\log P_{3|jk}/P_{1|jk} = \alpha_3 + \beta_{j3} + \gamma_{k3} , \qquad (8.6)$$

where j and k take the values 1 and 2. Thus, for each subscript pair (j, k) there are two equations which take the place of (2.2) of the dichotomous case. As in the case of the latter equation, we may apply the additional normalization:

$$\beta_{12} = \gamma_{12} = \beta_{13} = \gamma_{13} = 0 , \qquad (8.7)$$

so that the number of parameters to be estimated is six: α_2, α_3, β_{22}, β_{23}, γ_{22}, and γ_{23}. Table 8 supplies us with three relative frequencies in each of the four cells, but one of the three can be derived from the other two, so that there are eight independent relative frequencies and hence 2 df. These numbers (six parameters, eight cell frequencies, 2 df) are all twice as

large as the corresponding numbers for the dichotomous case with two determining factors which take two values each.[15]

9. Estimation of Conditional Logit Equations

The relevant conditional logits and their estimates based on the observed sample frequencies will be written as follows:

$$L_{r1|jk} = \log P_{r|jk}/P_{1|jk}\,, \qquad \bar{L}_{r1|jk} = \log f_{r|jk}/f_{1|jk}\,, \tag{9.1}$$

where $r = 2$ and 3, and j, $k = 1$ and 2 in the case of table 8. Equations (8.5) and (8.6) in terms of logit estimates may then be written as

$$\bar{L}_{21|jk} = \alpha_2 + \beta_{j2} + \gamma_{k2} + (\bar{L}_{21|jk} - L_{21|jk})\,, \tag{9.2}$$

$$\bar{L}_{31|jk} = \alpha_3 + \beta_{j3} + \gamma_{k3} + (\bar{L}_{31|jk} - L_{31|jk})\,, \tag{9.3}$$

where the terms in parentheses on the right are added to take account of the fact that the left-hand sides contain estimates of the true conditional logits.

We shall proceed under the assumption that the observed relative frequencies $f_{1|jk}$, $f_{2|jk}$, and $f_{3|jk}$ are the results of independent random drawings from a trinomial population with probabilities $P_{r|jk}$ ($r = 1, 2, 3$). Also, it is assumed that there is independence between the drawings from different populations (with different subscripts j, k). The estimation procedure is generalized least squares, which in the dichotomous case reduces to weighted least squares as stated below eq. (3.1). This is not true for the present case, because the two error terms in parentheses in (9.2) and (9.3) are correlated for each pair (j, k). This problem is considered in some detail in Appendix G, where it turns out that the scalar weight defined in (3.2) has to be modified to a 2 × 2 weight matrix:

$$W_{jk} = n_{jk}\begin{bmatrix} f_{2|jk}(1 - f_{2|jk}) & -f_{2|jk}f_{3|jk} \\ -f_{2|jk}f_{3|jk} & f_{3|jk}(1 - f_{3|jk}) \end{bmatrix}. \tag{9.4}$$

Note that the diagonal elements are similar to the weight (3.2). The nonzero off-diagonal elements reflect the nonzero correlation of $\bar{L}_{21|jk}$ and $\bar{L}_{31|jk}$. With the exception of these off-diagonal elements the estimation procedure is essentially the same as that of the ordinary linear logit equation.

Application of the procedure to the two sets of data of table 8 leads to the following point estimates (with standard errors in parentheses):

$\bar{a}_2 =$ 1.64 (0.12) for Negro MPs and 0.28 (0.08) for white MPs: the estimated conditional logit in favor of "half fair, half unfair" relative to "unfair most of the time" for Northern men in Northern camps;

[15] See Appendix F for a generalization of this result.

$\hat{\beta}_{22} =$ 0.20 (0.10) for Negro MPs and 0.27 (0.07) for white MPs: the estimated effect on this conditional logit of a Southern instead of a Northern origin;

$\hat{\gamma}_{22} =$ −0.37 (0.12) for Negro MPs and −0.30 (0.08) for white MPs: the estimated effect on the same conditional logit of a Southern rather than a Northern camp.

The positive values of β_{22} and the negative values of γ_{22} indicate that a Southern origin and a Northern camp experience have the effect of making the soldiers less dissatisfied with their MPs (Negro as well as white) in the sense that their verdict "half fair, half unfair" increases in frequency relative to that of "unfair." The parameter estimates of equation (9.3), which compares "fair" with "unfair," corroborate this result:

$\hat{a}_3 =$ 1.32 (0.13) for Negro MPs and −0.39 (0.09) for white MPs: the estimated conditional logit in favor of "fair most of the time" relative to "unfair most of the time" for Northern men in Northern camps;

$\hat{\beta}_{23} =$ 0.78 (0.10) for Negro MPs and 0.78 (0.08) for white MPs: the estimated effect on this conditional logit of a Southern instead of a Northern origin;

$\gamma_{23} =$ −0.68 (0.12) for Negro MPs and −0.59 (0.09) for white MPs: the estimated effect on the same conditional logit of a Southern rather than a Northern camp.

10. A Simple Hypothesis

The estimates presented above indicate that the intercepts a_2 and a_3 are quite different for the evaluation of the two groups of MPs, which should come as no surprise given the relative frequencies of table 8. However, the slopes (the β's and the γ's) are remarkably similar when we make a pairwise comparison. In none of the four cases ($\beta_{22}, \gamma_{22}, \beta_{23}, \gamma_{23}$) is the difference between the two point estimates for Negro and white MPs larger than the standard error of either estimate. In fact, the following rounded figures seem to give an adequate picture of the β's and γ's both for Negro MPs and for white MPs:

$$\begin{aligned} \beta_{22} &= \tfrac{1}{4} \qquad \gamma_{22} = -\tfrac{1}{3} \\ \beta_{23} &= \tfrac{3}{4} \qquad \gamma_{23} = -\tfrac{2}{3}\,. \end{aligned} \tag{10.1}$$

If the hypothesis of pairwise equal β's and γ's for the two groups of MPs is correct, this has the important implication that, although the levels of the evaluation of Negro MPs and of white MPs may be different (and they do differ substantially as the estimates of the a's show), the degree to which this evaluation is affected by the region of origin and the location of the camp is the same for the two groups.

To test the hypothesis (10.1) we reestimate α_2 and α_3 subject to the constraint (10.1), and the result is (see Appendix H):

$$\begin{aligned} \tilde{a}_2 &= 1.57\ (0.05)\ (\text{Negro MPs}) \qquad & \tilde{a}_3 &= 1.33\ (0.05)\ (\text{Negro MPs}) \\ &\ 0.32\ (0.03)\ (\text{white MPs}) & & -0.31\ (0.04)\ (\text{white MPs}). \end{aligned} \tag{10.2}$$

These point estimates are close to the corresponding values shown in the previous section, but the standard errors are reduced drastically due to the fact that the hypothesis (10.1) declares the β's and the γ's to be known.

TABLE 9

PROBABILITY ESTIMATES FOR EVALUATION OF NEGRO MPs

	NORTHERN MEN			SOUTHERN MEN		
CAMP	Unfair	Halfway	Fair	Unfair	Halfway	Fair
			Observed Relative Frequencies			
North..	0 078	0.511	0.411	0 076	0 413	0 511
South..	0.163	0.554	0.283	0.102	0.455	0 443
			Probability Estimates (No Constraint)			
North.	101	520	379	.065	.406	529
South..	156	.550	295	.106	457	.437
			Discrepancies			
North...	−0 023	−0.009	0 032	0 011	0 007	−0 018
South...	0.007	0.004	−0 012	−0.004	−0 002	0 006
			Probability Estimates (Under Constraint)			
North...	104	502	.394	066	408	527
South....	156	540	303	105	.465	.430
			Discrepancies			
North...	−0 026	0 009	0 017	0 010	0 005	−0 016
South....	0.007	0.014	−0 020	−0 003	−0 010	0 013

Using the estimates (10.2) and the values (10.1) as well as equations (8.5) and (8.6), one can obtain the estimates of the conditional logits $L_{21|jk}$ and $L_{31|jk}$ that are implied by the logit specification. These estimates may then be used to obtain estimates of the conditional probabilities. The equations to be used are

$$P_{1|jk} = 1/A_{jk} \qquad P_{2|jk} = e^{L_{21|jk}}/A_{jk} \qquad P_{3|jk} = e^{L_{31|jk}}/A_{jk}\,, \tag{10.3}$$

where

$$A_{jk} = 1 + e^{L_{21|jk}} + e^{L_{31|jk}}\,. \tag{10.4}$$

The probability estimates thus obtained, to be written $\tilde{P}_{r|jk}$, and the discrepancies $f_{r|jk} - \tilde{P}_{r|jk}$ are shown in tables 9 and 10, both for the estima-

tion procedure of the previous section (with six parameters adjusted) and for the present procedure (two parameters adjusted). The rėsults indicate that the agreement of the estimates with the observed relative frequencies is fair. To test whether it is sufficiently close we compute:

$$\sum_{j=1}^{2} \sum_{k=1}^{2} n_{jk} \sum_{r=1}^{3} (f_{r|jk} - \bar{P}_{r|jk})^2/\bar{P}_{r|jk}\,, \tag{10.5}$$

TABLE 10

PROBABILITY ESTIMATES FOR EVALUATION OF WHITE MPs

Camp	Northern Men			Southern Men		
	Unfair	Halfway	Fair	Unfair	Halfway	Fair
	Observed Relative Frequencies					
North	0.292	0 450	0 258	0 261	0 409	0.330
South . .	0.438	0.416	0 146	0 314	0 416	0.270
	Probability Estimates (No Constraint)					
North	333	442	225	238	412	350
South .	.423	.418	.159	322	.415	.264
	Discrepancies					
North .	−0 041	0.008	0.033	0 023	−0 003	−0 020
South .	0 015	−0 002	−0 013	−0 008	0.001	0 006
	Probability Estimates (Under Constraint)					
North	.321	444	235	231	410	358
South	.423	418	.159	326	415	259
	Discrepancies					
North	−0 029	0 006	0.023	0.030	−0 001	−0 028
South	0 015	−0 002	−0 013	−0 012	0 001	0 011

which under the hypothesis (10.1) is asymptotically distributed as χ^2 with $8 - 2 = 6$ df.[16] The numerical result is 9.3 for Negro MPs and 11.1 for white MPs, both of which are below the 5 percent significance level (which is 12.6), so that in neither case can the hypothesis (10.1) be rejected at that level.

11. Interaction

Although the χ^2s are not significant at the conventional 5 percent level, it is true that they are on the high side. Note that they are not independent,

[16] The asymptotic theory underlying this statement is completely analogous to the corresponding theory given in Appendix E on the dichotomous case.

so that it is not permissible to treat their sum as a χ^2 variate with 12 df (which would give a significant result at that level). The reason is that each soldier was asked to evaluate both Negro and white MPs, and that it is likely that the answers are dependent in the sense that, if a man passes a favorable (unfavorable) verdict on one group of MPs, this raises the probability that he also passes a favorable (unfavorable) verdict on the other group. The relative frequencies of table 8 are the marginal frequencies of the 3 × 3 table of response frequencies for both groups of MPs jointly, and one would need such a 3 × 3 table for each pair (X_j, Y_k) to analyze the degree of dependence. But these tables are not available.

It is appropriate to stress that the χ^2s of the adjustments of section 9 are large. They are 7.8 for Negro MPs and 10.0 for white MPs, which is less than the values reported at the end of section 10 but nevertheless significant at the 5 percent level, because the six adjusted coefficients imply that there are only 2 df in each case. It is therefore worthwhile to inspect the discrepancies of tables 9 and 10 to see whether they show any regularity (in particular the larger ones), in which case one should reflect on whether this regularity is plausible and what can be done about it.

A comparison of the three discrepancies in each cell indicates that those of $r = 2$ ("about half fair, half unfair") are usually closer to 0 than the corresponding discrepancies of $r = 1$ and $r = 3$. The latter discrepancies do exhibit a perfect regularity as far as their signs are concerned: They are negative for $r = 1$ and positive for $r = 3$ for Northern men in Northern camps and for Southern men in Southern camps, and just the other way in all cases in which men are living in camps in an area other than that of their origin. In other words, our conditional logit model predicts a verdict of "unfair" in a larger number of cases than the observations show when men are in camps in their own region, and in a smaller number of cases than the data indicate when the camp is in a different region. Similarly, our model predicts a verdict of "fair" in a smaller number of cases than the data show when men are in camps in their own region, and in a larger number for men living under opposite conditons.

These results suggest that men whose camps are in their region of origin have better relationships with their MPs, which does not seem unreasonable a priori. This amounts to interaction between the two determining factors, but there are not enough degrees of freedom available to test for interaction terms δ_{jk2} and δ_{jk3} in the conditional logit equations (8.5) and (8.6), respectively. An approach which economizes on the number of parameters is therefore in order. The approach that will be followed can be formulated most easily when we take conditional odds with $P_{2|jk}$ (the "halfway" case) in the denominator:

$$\log P_{1|jk}/P_{2|jk} = (\alpha_1 - \alpha_2) + (\beta_{j1} - \beta_{j2}) + (\gamma_{k1} - \gamma_{k2}) - \delta(-1)^{j+k} \quad (11.1)$$

$$\log P_{3|jk}/P_{2|jk} = (\alpha_3 - \alpha_2) + (\beta_{j3} - \beta_{j2}) + (\gamma_{k3} - \gamma_{k2}) + \delta(-1)^{j+k}. \quad (11.2)$$

This specification is identical with that of the earlier sections except for the last term, which represents the interaction effect. When men are in camps in their own region, then $j + k = 2$ or 4, so that $(-1)^{j+k} = 1$. Hence, the logit (11.1) has $-\delta$ in the right-hand side for these groups of soldiers and the logit (11.2) has $+\delta$. For the other groups of soldiers we have $j + k = 3$ and hence $(-1)^{j+k} = -1$, so that the signs of δ are reversed. It is readily seen that a positive value of δ ensures that the probability of "unfair" is reduced relative to that of "halfway," and that the probability of "fair" is increased relative to that of "halfway" for all men who are in camps in their own region. For the others the effect works in the opposite way. Note that by subtracting (11.2) from (11.1) we obtain:

$$\log P_{1|jk}/P_{3|jk} = (\alpha_1 - \alpha_3) + (\beta_{j1} - \beta_{j3}) + (\gamma_{k1} - \gamma_{k3}) - 2\delta(-1)^{j+k}, \quad (11.3)$$

which shows that in the conditional logit comparison of "unfair" and "fair," the interaction parameter is twice as large as it is in (11.1) and (11.2).

The specification (11.1)-(11.2) involves one additional parameter, so that there is only 1 df left. The estimation procedure is described in Appendix I, where it turns out that both for Negro and for white MPs the δ estimate is about 0.07, with a standard error between 0.02 and 0.03. In addition, although the estimates of the β's and γ's are affected by the introduction of the interaction term, they are not affected very much. A natural procedure is then to test the specification (11.1)-(11.2) for the β's and γ's equal to the rounded values (10.1) and for δ also equal to a rounded value, for which we shall take 0.05. As in the case of the previous section, this means that the evaluation of white and Negro MPs is affected by the region of origin and the camp location in the same way. The new estimates of the α's are:

$$\begin{array}{llll} \tilde{\alpha}_2 = 1.57\ (0.05)\ \text{(Negro MPs)} & & \tilde{\alpha}_3 = 1.32\ (0.05)\ \text{(Negro MPs)} & \\ \quad\ 0.32\ (0.03)\ \text{(white MPs)} & & \quad -0.34\ (0.04)\ \text{(white MPs).} & \end{array} \quad (11.4)$$

These values are extremely close to those of (10.2). The implied probabilities are given in table 11, which shows that the fit is improved relative to that of tables 9 and 10. The corresponding χ^2s are 3.23 for the Negro MPs and 1.69 for the white MPs, which indicates a satisfactory agreement between the model and the data.

III. THE EXPLANATORY POWER OF DETERMINING FACTORS

12. Introduction

Our final topic is the degree to which the determining factors of our relations account for the phenomenon which they serve to explain. As an

example, consider tables 1 (on the preference for a Southern camp), 2 (on the preference to be in a combat outfit), and 8 (on the evaluation of MPs). In each of these cases there are either two or three determining factors. The question is: How successful are these factors in actually determining the relevant attitude or preference of the respondent? The point of view that will be adopted here is that the factors are *completely successful* if and only if it is known with *certainty*, for each combination of values taken by these

TABLE 11

PROBABILITY ESTIMATES UNDER CONDITIONS OF INTERACTION

	Northern Men			Southern Men		
Camp	Unfair	Halfway	Fair	Unfair	Halfway	Fair
			Observed Relative Frequencies (Negro MPs)			
North	0.078	0 511	0.411	0 076	0 413	0 511
South	0.163	0 554	0 283	0.102	0 455	0 443
			Probability Estimates			
North	098	497	405	.071	.419	.509
South	166	546	288	099	460	442
			Discrepancies			
North	−0 020	0 014	0 006	0 005	−0.006	0 002
South	−0 003	0 008	−0 005	0.003	−0 005	0 001
			Observed Relative Frequencies (White MPs)			
North	0 292	0 450	0.258	0 261	0 409	0 330
South	0 438	0 416	0.146	0 314	0 416	0 270
			Probability Estimates			
North	.309	.446	244	247	.414	339
South	.441	413	147	314	.417	270
			Discrepancies			
North	−0.017	0 004	0 014	0.014	−0 005	−0 009
South	−0 003	0 003	−0 001	0 000	−0 001	0 000

factors, what the response will be. This means for the case of tables 1 and 2 that the proportions in the lower half should be either 0 or 1, and for that of table 8 that in each of the eight cells one of the three proportions in parentheses should be unity and the two others 0. Furthermore, the factors will be regarded as *completely unsuccessful* if and only if the proportions of each response are the same for all combinations of values of these factors. This means that all eight proportions in the lower half of table 1 should be equal, similarly for all twelve proportions in table 2, while in the case of

table 8 the same proportions (x, y, z) should appear in all four cells for the evaluation of Negro MPs and similarly for white MPs.

Needless to say, these two situations represent extremes, and in most cases, including those of the above tables, the real situation is in between. The question is: "Where in between?" It will be answered by means of some elementary concepts derived from information theory.[17]

13. Entropy Measures for the Two-Variable Case

Consider the situation in which the response proportions are determined by only one factor. An example is the case of table 8 when we consider Northern camps only, so that the evaluation of the MPs depends only on the soldier's region of origin. Write D for the dependent variable, which takes three values in this case: D_1, unfair most of the time; D_2, about half fair, half unfair; D_3, fair most of the time. Write X for the region of origin, which takes two values: X_1 (Northern men) and X_2 (Southern men). Furthermore, write p_{rj} for the probability that $D = D_r$ and $X = X_j$:

$$P(D = D_r, X = X_j) = p_{rj} \qquad \begin{matrix} r = 1, 2, 3 \\ j = 1, 2 \end{matrix}, \tag{13.1}$$

and indicate marginal probabilities by dots as subscripts:

$$p_{r.} = \sum_{j=1}^{2} p_{rj} \qquad p_{.j} = \sum_{r=1}^{3} p_{rj} \,. \tag{13.2}$$

One of the main objectives of information theory is the measurement of the uncertainty which is associated with a probability distribution. The particular measure which it uses for this purpose is the *entropy*, defined as minus the expectation of the logarithm of the probability. Thus, the entropy of the marginal distribution of our dependent variable is

$$H(D) = -\sum_{r=1}^{3} p_{r.} \log p_{r.} \,. \tag{13.3}$$

This entropy is nonnegative and it vanishes if and only if one of the probabilities is unity and (therefore) all others are 0.[18] Thus, there is minimum

[17] Information theory in its modern form dates back to Shannon's work (1948). The exposition which follows in the next sections does not presuppose any knowledge of this theory.

[18] Proof: Minus the log of a probability is always positive unless the probability is 1 (in which case minus the log is 0). Since the entropy is obtained by weighting these negative logarithms by the probabilities, it must be positive apart from this exception, and in that special case it vanishes, as is easily verified. (Note that 0 log 0 is defined as 0 in accordance with the limit of $x \log x$ for x approaching 0).

(zero) entropy if and only if one of the possible responses has unit probability, which is reasonable for a measure of uncertainty. The maximum is reached when all probabilities are equal, and the value of the maximum is equal to the logarithm of the number of possible outcomes (log 3 in this case).[19] Hence the entropy declares the equiprobability case to be the case of maximum uncertainty. This is also intuitively reasonable, because when the probabilities are ($\frac{1}{3}$, $\frac{1}{3}$, $\frac{1}{3}$), there is evidently a great deal more uncertainty as to what will actually happen than when the probabilities are (.98, .01, .01).

We return to the case of the first paragraph of this section and assume that it is known that $X = X_j$. The probability of $D = D_r$ is then $p_{rj}/p_{.j}$, and the relevant entropy of D is the conditional entropy given $X = X_j$:

$$H_{X_j}(D) = -\sum_{r=1}^{3} p_{rj}/p_{.j} \log p_{rj}/p_{.j} \,. \tag{13.4}$$

Since the probability of the condition $X = X_j$ is $p_{.j}$, the *average conditional entropy* of D given X is obtained by applying these probabilities as weights:

$$H_X(D) = \sum_{j=1}^{2} p_{.j} H_{X_j}(D) = \sum_{r=1}^{3} \sum_{j=1}^{2} p_{rj} \log p_{.j}/p_{rj} \,. \tag{13.5}$$

This $H_X(D)$ measures the uncertainty of D, which prevails on the average when we know the value of the determining factor. The logarithm in the third member of (13.5) is nonnegative because $p_{.j} \geq p_{rj}$ holds for each pair (r, j). A zero value of $H_X(D)$ corresponds with complete success of the determining factors as defined in section 12. This is so, because $H_X(D)$ is obtained by weighting the nonnegative $H_{X_j}(D)$ with the nonnegative $p_{.j}$, so that $H_X(D) = 0$ occurs if and only if each $H_{X_j}(D) = 0$ for which $p_{.j} > 0$, which implies that the response is known with unit probability when the value of the determining factor is known.

It stands to reason that, on average, knowledge of X cannot increase the uncertainty of D. Indeed, $H_X(D)$ is at most equal to $H(D)$:

[19] The simplest way to prove that log N is the maximum entropy (where N is the number of possible outcomes) and that this maximum is reached when all probabilities are equal to $1/N$, is by maximization subject to the constraint that the probabilities add up to 1. This can be done by differentiating the Lagrangian function

$$-\sum_{i=1}^{N} p_i \log p_i - \lambda\left(\sum_{i=1}^{N} p_i - 1\right),$$

where λ is a Lagrangian multiplier. Note that the value of the maximum (log N) increases when the number of possible outcomes (N) increases. This is reasonable too, because there is more uncertainty as to what will happen when there are four possibilities with probability $\frac{1}{4}$ each than when there are only two with probability $\frac{1}{2}$ each.

$$H(D) - H_X(D) = -\sum_{r=1}^{3} p_{r.} \log p_{r.} - \sum_{r=1}^{3} \sum_{j=1}^{2} p_{rj} \log p_{.j}/p_{rj}$$

$$= \sum_{r=1}^{3} \sum_{j=1}^{2} p_{rj}(- \log p_{r.} - \log p_{.j}/p_{rj}) \tag{13.6}$$

$$= \sum_{r=1}^{3} \sum_{j=1}^{2} p_{rj} \log p_{rj}/p_{r.}p_{.j} \geq 0 .$$

The inequality sign on the third line is based on the following simple lemma, which is proved in Appendix J. Let $a_1, \ldots, a_N$ and $b_1, \ldots, b_N$ be two sets of N real numbers, all nonnegative and adding up to one: $\Sigma_i a_i = \Sigma_i b_i = 1$. Then:

$$\sum_{i=1}^{N} a_i \log a_i/b_i \geq 0 , \tag{13.7}$$

where the equality sign applies if and only if $a_i = b_i$ holds for each i. To apply this to (13.6) we simply identify a_i with p_{rj} and b_i with $p_{r.}p_{.j}$ (so that $N = 3 \times 2 = 6$). Note that the six numbers p_{rj} and also the six numbers $p_{r.}p_{.j}$ are indeed nonnegative and add up to 1 when summed over r and j.

This result implies that the entropy reduction (13.6) is always positive except when

$$p_{rj} = p_{r.} p_{.j} \qquad \text{for each pair} \qquad (r, j) , \tag{13.8}$$

in which case there is a zero reduction. The case (13.8) is that of stochastic independence of D and X and it implies $p_{rj}/p_{.j} = p_{r.}$ for each pair (r, j). Thus, the conditional probabilities are all independent of their conditions, which corresponds to the case of complete failure of the determining factors as defined in section 12.

14. Applications and Extensions to the Multivariate Case

The case of table 8.—In table 8 there are actually two determining factors rather than one: X, the region of origin and Y, the location of the camp, both of which take two values (X_1, X_2, Y_1, Y_2, where the subscript 1 refers to the North and 2 to the South). Our probabilities should therefore have three subscripts rather than two: p_{rjk}, where the third corresponds to $Y = Y_k$. The uncertainty as to the soldier's evaluation of the MPs before his region of origin and the location of his camp are known is now measured by the marginal entropy of D in a three-dimensional distribution:

$$H(D) = -\sum_{r=1}^{3} p_{r..} \log p_{r..} , \tag{14.1}$$

where the two dots of $p_{r..}$ indicate that this probability is obtained from p_{rjk} by summation over both j and k.

When it is known that $X = X_j$ and $Y = Y_k$, the probability of $D = D_r$ becomes $p_{rjk}/p_{.jk}$. The uncertainty as to D is then measured by the following conditional entropy:

$$H_{X_jY_k}(D) = -\sum_{r=1}^{3} p_{rjk}/p_{.jk} \log p_{rjk}/p_{.jk} . \tag{14.2}$$

The average conditional entropy of D, given both X and Y, is again obtained by weighting with the probabilities of the conditions:

$$H_{XY}(D) = \sum_{j=1}^{2}\sum_{k=1}^{2} p_{.jk}H_{X_jY_k}(D) = \sum_{r=1}^{3}\sum_{j=1}^{2}\sum_{k=1}^{2} p_{rjk} \log p_{.jk}/p_{rjk} . \tag{14.3}$$

It is readily verified along lines similar to (13.6)-(13.8) that $H_{XY}(D) \leq H(D)$, and that the equality sign applies if and only if

$$p_{rjk}/p_{.jk} = p_r \quad \text{for each triple} \quad (r, j, k) . \tag{14.4}$$

Condition (14.4) implies that the conditional probability of $D = D_r$, given $X = X_j$ and $Y = Y_k$, is independent of the condition. In that case D is stochastically independent of (X, Y), so that knowledge of X or Y or both does not contribute anything to a reduced uncertainty regarding D. But otherwise there is such a reduction, at least on the average, and the entropy difference $H(D) - H_{XY}(D)$ measures this average uncertainty reduction.

To evaluate these entropies numerically, we write $P_{r|jk}$ for the conditional probability of $D = D_r$, given $X = X_j$ and $Y = Y_k$:

$$P_{r|jk} = p_{rjk}/p_{.jk} . \tag{14.5}$$

We shall operate conditionally on the observed values of the determining factors. This means that $p_{.jk}$ is put equal to the observed relative frequency of these factors and thus to n_{jk}/n, where n_{jk} is the relevant number before the parentheses in table 8 and $n = \Sigma_j \Sigma_k n_{jk}$. It follows from (14.5) that each p_{rjk} is then known as soon as $P_{r|jk}$ is known for each triple (r, j, k), and knowledge of the p_{rjk}s will permit us to derive all of our entropy measures. However, it is not true that we know $P_{r|jk}$. The proportions in parentheses in table 8 are based on samples of finite sizes and will thus be characterized by discrepancies from the true conditional probabilities. We shall nevertheless use these proportions on the ground that the samples are large, so that the discrepancies will be modest.[20]

[20] Another justification is that similar goodness-of-fit measures such as correlation coefficients in least-squares regression are essentially descriptive of the sample, so that it is not unreasonable to adopt the same attitude here. An alternative procedure is to replace the observed proportions by the probability estimates which are implied by the

Thus, multiplication of $p_{.jk}$ by the relevant proportion in table 8 gives p_{rjk}, and summation over j and k gives the marginal probability $p_{r..}$. Using natural logarithms and (14.1), we obtain the following results:

$$H(D) = 0.9625 \text{ (table 1, Negro MPs)} \qquad 1.0763 \text{ (table 2, white MPs)}\,. \tag{14.6}$$

It is instructive to compare these figures with $\log_e 3 = 1.0986$, which is the maximum entropy. The lower value for Negro MPs simply means that its distribution $(p_{1..}, p_{2..}, p_{3..})$ is farther from $(\frac{1}{3}, \frac{1}{3}, \frac{1}{3})$ than the corresponding distribution for white MPs. A cursory inspection of table 8 reveals that this was to be expected because of the low values of $P_{1|jk}$.

The average conditional entropies of the MP evaluation, given the region of origin and the location of the present camp, are as follows:

$$H_{XY}(D) = 0.9472 \text{ (Negro MPs)} \qquad 1.0619 \text{ (white MPs)}\,. \tag{14.7}$$

These values are below the corresponding numbers in (14.6), although not very much. The entropy reduction due to knowledge of the soldier's region of origin and the location of his camp is, therefore,

$$H(D) - H_{XY}(D) = 0.0153 \text{ (Negro MPs)} \qquad 0.0144 \text{ (white MPs)}\,. \tag{14.8}$$

The uncertainty reduction is thus of the same order of magnitude for the two groups of MPs. We shall discuss the (low) level of these reductions in section 15.

Average conditional entropies expressed in terms of unconditional entropies.—Consider the joint entropy of the complete three-dimensional distribution of (D, X, Y):

$$H(D, X, Y) = -\sum_{r=1}^{3}\sum_{j=1}^{2}\sum_{k=1}^{2} p_{rjk} \log p_{rjk}\,, \tag{14.9}$$

and subtract from this the joint entropy of the two-dimensional distribution of (X, Y):

$$-\sum_{r=1}^{3}\sum_{j=1}^{2}\sum_{k=1}^{2} p_{rjk}(\log p_{rjk} - \log p_{.jk}) = \sum_{r=1}^{3}\sum_{j=1}^{2}\sum_{k=1}^{2} p_{rjk} \log p_{.jk}/p_{rjk}\,.$$

On comparing this with (14.3) we conclude:

$$H_{XY}(D) = H(D, X, Y) - H(X, Y)\,. \tag{14.10}$$

logit equations. Such computations were actually made, but the numerical differences with the results described below are small and uninteresting.

This result holds generally: The average conditional entropy of D, given a set of factors, is equal to the joint entropy of D and these factors minus the entropy of the conditioning factors. It enables the analyst to compute his average conditional entropy from a pair of unconditional entropies. Basically, the result is the entropy analogue of the familiar rule that the conditional probability of D_r given X_j and Y_k is equal to the joint probability of (D_r, X_j, Y_k) divided by the probability of (X_j, Y_k). "Divided by" is replaced by "minus" in (14.10) because entropies are defined in terms of logarithms of probabilities. This logarithmic approach implies that entropies (and informational measures generally) have an additive character.

The case of tables 1 and 2.—In tables 1 and 2 there are three determining factors, so that the probabilities of the joint distribution are of the form p_{rjkl}, where the index l refers to the third factor $Z = Z_l$. As in the first part of this section, we operate conditionally on the determining factors and thus define $p_{.jkl}$ as n_{jkl}/n, where n_{jkl} is the appropriate number in the upper halves of tables 1 and 2 and n is the sum of n_{jkl} over the three subscripts. In both tables we have a dichotomous dependent variable. Write P_{jkl} for the conditional probability of a positive response under the condition (X_j, Y_k, Z_l) and hence $1 - P_{jkl}$ for the corresponding probability of a nonpositive response. The joint probabilities of the four-dimensional distribution are then obtained from

$$p_{1jkl} = p_{.jkl}P_{jkl} \qquad p_{2jkl} = p_{.jkl}(1 - P_{jkl}) \,, \tag{14.11}$$

where the subscript 1 (2) in the first position refers to a positive (nonpositive) response. Equation (14.11) is the extension of (14.5) to the present case, and as in the earlier case we shall approximate P_{jkl} by the proportions in the lower halves of tables 1 and 2.

We obtain $p_{r...}$ $(r = 1, 2)$ by summation of the left-hand probabilities of (14.11) over the last three subscripts. The associated marginal entropy describes the uncertainty of the dependent variable when nothing is known about the values of the determining factors:

$$\begin{aligned} H(D) &= 0.6931 \text{ (table 1)} \\ & 0.4558 \text{ (table 2)} \,. \end{aligned} \tag{14.12}$$

These values should be compared with $\log_e 2 = 0.6931$, which is the maximum entropy for two possible outcomes, attained by a fifty-fifty distribution. Table 1 reaches this maximum in four decimal places, but table 2 stays far below. As the proportions of the latter table indicate, this is due to the fact that $p_{1...}$ (the unconditional probability of an expressed desire to be in a combat outfit) is considerably less than $\frac{1}{2}$.

The average conditional entropy of D given the three determining factors may be found by subtracting the three-dimensional entropy of these factors

from the joint four-dimensional entropy. The result is:

$$H_{XYZ}(D) = 0.4992 \text{ (table 1)} \qquad (14.13)$$
$$0.4366 \text{ (table 2)} .$$

and hence the entropy reductions:

$$H(D) - H_{XYZ}(D) = 0.1939 \text{ (table 1)} \qquad (14.14)$$
$$0.0192 \text{ (table 2)} .$$

The reduction for table 1 is more than ten times larger than that of table 8, but for table 2 it is of the same low order of magnitude.

15. A Comparison with Multiple Correlation Coefficients

The correlation coefficients of classical least-squares regression may be regarded as measuring uncertainty by means of squared errors. Take the multiple correlation coefficient R, which is defined such that $1 - R^2$ is equal to the ratio of the residual variance to the variance of the dependent variable of the regression. Thus, if we accept the mean square error as a criterion for average uncertainty in regression, $1 - R^2$ measures the average uncertainty of the dependent variable that prevails when the values of the independent variables are known, relative to the average uncertainty before anything is known on these variables. This suggests that it may be fruitful to compare $1 - R^2$ with the ratio of the average conditional entropy of D, given the determining factors, to the unconditional entropy of D. This ratio is 0.72 in the case of table 1, and if we identify this with $1 - R^2$ we obtain an R of a little over .5, which is not particularly high. For tables 2 and 8 we obtain ratios varying between 0.96 and 0.99, which correspond with R's between .1 and .2. This is definitely very low. What is the reason?

It is well known that, by and large, multiple correlation coefficients tend to be smaller when the regression is computed on data which are characterized by a lower degree of aggregation. It is not too difficult to obtain an R^2 larger than .9 when running a time series regression of total per capita consumption on per capita income. The R^2 is usually smaller when the dependent variable is consumption of a particular commodity group, such as meat. It is lower still when we use cross-section rather than time-series data in such a meat regression, because there is then no aggregation over consumers. The R^2 will typically be further reduced when the cross-section data refer to consumption during a month instead of a year, because there is then less aggregation over time. Disaggregation typically raises the importance of accidental factors and thus lowers R^2.

The data considered in this article are disaggregative to a very con-

siderable degree. In the case of table 8, we basically ask the following question: If we know where a soldier comes from and where his camp is located to what extent does this enable us to predict how this man thinks about his MPs? It should come as no surprise that this extent is very limited. It must be admitted, however, that there are situations in which this way of looking at the problem is unjustifiably pessimistic. When a politician runs for office, it is sufficient for him to get more than 50 percent of the votes. It is irrelevant from the viewpoint of being elected (although it is interesting from a scientific point of view) to know where his votes came from. On the other hand, there are many situations in which the individual viewpoint is the relevant one. One example is probabilistic weather prediction: A person is interested in whether tomorrow, August 10, will be a sunny day in a certain area, and the weather bureau is able to say on television on August 9 whether the chance of a sunny August 10 is $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$. In a long series of August 9s, these three possibilities occur equally frequently. To ensure consistency we assume that the climatological chance of a sunny August 10 is $\frac{1}{3}(\frac{1}{4} + \frac{1}{2} + \frac{3}{4}) = \frac{1}{2}$. The unconditional entropy of a sunny August 10 is thus $\log 2 = 0.6931$; it measures the person's uncertainty before he has seen the forecast on television. The three possible conditional entropies, given the three possible forecasts, are:

$$-\tfrac{1}{4}\log\tfrac{1}{4} - \tfrac{3}{4}\log\tfrac{3}{4} = 0.5623$$

$$-\tfrac{1}{2}\log\tfrac{1}{2} - \tfrac{1}{2}\log\tfrac{1}{2} = 0.6931$$

$$-\tfrac{3}{4}\log\tfrac{3}{4} - \tfrac{1}{4}\log\tfrac{1}{4} = 0.5623\,.$$

The average conditional entropy, given the weather bureau's forecast, is thus 0.6059, so that the entropy reduction is 0.0872. This is larger than the corresponding values for tables 2 and 8 but smaller than that of table 1.

We conclude this section by stressing that the determining factors reduce the entropy only *on the average*. Consider table 2, in particular the Northern soldiers who completed high school and are against racial separation. The proportion of those who express a preference for a combat outfit is 0.31, which is the largest of the table, so that the unconditional proportion must be less than 0.31. This particular conditional proportion is thus closer to $\frac{1}{2}$ than the unconditional proportion, which means that the conditional entropy given "against racial separation, North, high school completed" is larger, not smaller, than the unconditional entropy. Note that the situation of the multiple correlation coefficient is similar in this regard, because it is based on the criterion of a *mean* squared error. It may well be true for an *individual* observation that its squared deviation from the regression plane is larger, not smaller, than its squared deviation from the mean of the dependent variable.

16. Partial Correlations and Partial Entropy Reductions

It is well known that when the regression contains K independent variables, the multiple correlation coefficient satisfies:

$$1 - R^2 = (1 - r_h^2)(1 - R_h^2) \qquad h = 1, \ldots, K\,, \quad (16.1)$$

where r_h is the partial correlation coefficient of the dependent variable and the hth independent variable, given the $K - 1$ other independent variables, and R_h is the multiple correlation corresponding to the regression of the dependent variable on the latter $K - 1$ variables, the hth independent variable being excluded.

The decomposition (16.1) is multiplicative, whereas the entropy measures have an additive character. It is instructive to make (16.1) additive by taking logarithms on both sides. The result may be written as follows:

$$-\log(1 - r_h^2) = \log(1 - R_h^2) - \log(1 - R^2)\,. \quad (16.2)$$

The two terms on the right can be regarded as measuring uncertainty after the log-transformation, so that they may be conceptually compared with $H_Y(D)$ and $H_{XY}(D)$, respectively, where X and Y are the two factors determining D, and X is the factor which is left out in the first term. Thus, the left-hand expression in (16.2) may be compared with the entropy difference $H_Y(D) - H_{XY}(D)$, and it thus seems natural to call this difference the *partial entropy reduction* of D due to X given Y.[21] When we have three determining factors (X, Y, Z), the partial entropy reduction of D due to X, given Y and Z, is $H_{YZ}(D) - H_{XYZ}(D)$. Such a partial reduction may be computed for each factor; the numerical results for the cases of tables 1, 2, and 8 are shown on the first three lines of table 12. It can be proved (see Appendix K) that a partial entropy reduction such as $H_Y(D) - H_{XY}(D)$ is nonnegative, and that it vanishes if and only if the added factor (X in this case) does not effect the conditional distribution of D; that is if and only if, for each triple (r, j, k), the conditional probability $P_{r|jk}$ is independent of j.

By adding the partial entropy reductions of all determining factors we obtain the total partial entropy reduction. Is this total equal to the entropy reduction due to all factors jointly? The answer is that this is in general not the case. The matter is pursued in Appendix L, and the result may be summarized as follows for the two-factor case. Consider the marginal distribution of these factors (X and Y) and assume that it is charac-

[21] Another good reason is that the partial correlation coefficient of two variables given another set of variables is symmetric in the former two variables and that, similarly, the partial entropy reduction of D due to X given a set of factors is equal to the partial entropy reduction of X due to D given the same set of factors. The latter statement is easily proved by expressing the relevant average conditional entropies in terms of unconditional entropies (see second part of section 14).

terized by independence, so that $p_{.jk} = p_{.j.}p_{..k}$ holds for each pair (j, k) Next, consider their conditional distribution given $D = D_r$, the probabilitie of which are of the form $p_{rjk}/p_{r..}$. If for each D_r this distribution has als the property of independence, then the joint entropy reduction is equa to the total partial reduction.[22] That is a sufficient, not a necessary, con dition; it may be weakened as follows. Information theory develops a simple measure for the degree to which random variables are dependent This measure can be computed for the marginal distribution of (X, Y) and also for each conditional distribution given $D = D_r$ $(r = 1, 2, \ldots)$ When there is as much dependence in the marginal distribution as in these conditional distributions on the average (where the probability $p_{r..}$ of the

TABLE 12

ENTROPY DECOMPOSITIONS

	Table 1 (Southern Camp)	Table 2 (Combat Outfit)	Table 8 (Negro MPs)	Table 8 (White MPs)
	Partial Entropy Reductions			
	Origin: 0 1424 Race: 0 0094 Camp: 0.0431	Separation*: 0 0015 Origin: 0 0053 Education: 0 0064	Origin: 0 0112 Camp: 0 0051	Origin: 0.0103 Camp: 0 0056
	Total Reductions			
Total partial	0 1949	0 0132	0 0164	0 0160
Dependence effect	−0 0010	0 0060	−0 0011	−0 0015
Total	0 1939	0 0192	0 0153	0 0144
	Remaining Average Conditional Entropy			
	0 4992	0 4366	0 9472	1 0619

* Attitude toward racial separation.

condition $D = D_r$ is used as a weight), the joint entropy reduction is equal to the total partial reduction. When the marginal distribution has more (less) dependence than the conditional distributions on the average, the joint entropy reduction is larger (smaller) than the total partial reduction. These results suggest that the excess of the joint entropy reduction

[22] This bears some resemblance to the following result in product-moment correlation theory. Write $R^2 - R_h^2$ for the incremental contribution of the hth independent variable the increase in the squared multiple correlation coefficient which is caused by the addition of the hth independent variable to the set of $K - 1$ other independent variables. Then the sum of all K incremental contributions is equal to the contribution R^2 of all K variables jointly when all independent variables are uncorrelated. (It comes as no surprise that in linear regression "uncorrelated" takes the place of "independent.") In fact, the partial entropy reductions have similarities both to partial correlations and to these incremental contributions.

over the total partial reduction may appropriately be called the *dependence effect* of the determining factors.

The results for our data are shown in table 12. It appears that the outcomes for the attitude toward Negro and white MPs are nearly equal. In both cases the partial entropy reduction due to the soldier's region of origin, given the location of his camp, is about twice as large as the partial entropy reduction due to the latter variable given the former (a feature which is not immediately apparent from table 8), and the total partial reduction is about 0.016. The dependence effect takes a small negative value and the joint entropy reduction is about 0.015. The figures concerning the preference for a Southern camp are of a different order of magnitude. The largest partial entropy reduction is that due to the region of origin of the soldier, the smallest that of the Negro-white distinction. Both the total partial and the joint entropy reduction are almost 0.2, the dependence effect being again small and negative. The three partial reductions in the case of the desire to be in a combat outfit are small, all below the smallest of the first column. The total partial entropy reduction is only 0.013, but the dependence effect takes a comparatively large positive value so that the joint reduction is almost 0.02. Note that the remaining average conditional entropy of this case is the lowest of all four. This is simply the consequence of the fact that the unconditional proportion of those who desire to be in a combat outfit is so small that the uncertainty $H(D)$ which prevails before any determining factors are used is also small.

APPENDIX

A. The Weighted Least-Squares Method for Table 1 (No Interaction)

The asymptotic distribution of the logit corresponding to a relative frequency.—Under the usual binomial assumptions, the relative frequency f_{jkl} is asymptotically ($n_{jkl} \to \infty$) normally distributed with mean P_{jkl} and variance $P_{jkl}(1 - P_{jkl})/n_{jkl}$. The logit estimator $\bar{L}_{jkl}$ is defined in (3.1) as a function of f_{jkl} which has a continuous second-order derivative in an interval that contains $f_{jkl} = P_{jkl}$ as an interior point, provided that P_{jkl} is neither 0 nor 1. (The linear logit specification [2.2] guarantees that this proviso is fulfilled.) Consequently, $\bar{L}_{jkl}$ is asymptotically normally distributed with a mean equal to the true logit L_{jkl}, and a variance equal to the asymptotic variance of f_{jkl} multiplied by the square of the derivative of $\bar{L}_{jkl}$ with respect to f_{jkl} evaluated at $f_{jkl} = P_{jkl}$. This amounts to:

$$\text{asymptotic variance of } \bar{L}_{jkl} = \frac{1}{n_{jkl}P_{jkl}(1 - P_{jkl})}, \tag{A.1}$$

which can be proved as follows. The derivative of $\bar{L}_{jkl}$ with respect to f_{jkl} is

$$\frac{\partial}{\partial f_{jkl}} (\log f_{jkl}/1 - f_{jkl}) = 1/[f_{jkl}(1 - f_{jkl})],$$

and hence, when evaluated at $f_{jkl} = P_{jkl}$, equal to the reciprocal of the product $P_{jkl}(1 - P_{jkl})$. It was stated above that the asymptotic variance of f_{jkl} is equal to this product divided by n_{jkl}. By multiplying this variance by the square of the derivative we obtain the result (A.1).

The weighted least-squares procedure.—The linear relation (2.2) with $\bar{L}_{jkl}$ instead of L_{jkl} on the left can be written in matrix form as shown below for all triples (j, k, l) combined. Note that the normalization rule (2.3) is used and that error terms $\bar{L}_{jkl} - L_{jkl}$ are added to the right-hand side to compensate for the modification on the left.

$$\begin{bmatrix} \bar{L}_{111} \\ \bar{L}_{112} \\ \bar{L}_{121} \\ \bar{L}_{122} \\ \bar{L}_{211} \\ \bar{L}_{212} \\ \bar{L}_{221} \\ \bar{L}_{222} \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 \\ 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 1 \\ 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \\ 1 & 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} \alpha \\ \beta_2 \\ \gamma_2 \\ \delta_2 \end{bmatrix} + \begin{bmatrix} \bar{L}_{111} - L_{111} \\ \bar{L}_{112} - L_{112} \\ \bar{L}_{121} - L_{121} \\ \bar{L}_{122} - L_{122} \\ \bar{L}_{211} - L_{211} \\ \bar{L}_{212} - L_{212} \\ \bar{L}_{221} - L_{221} \\ \bar{L}_{222} - L_{222} \end{bmatrix} . \tag{A.2}$$

This can be written in the form $y = X\beta + \epsilon$, where y is the eight-element column vector on the left and X, β, and ϵ are the matrices on the right whose successive orders are 8×4, 4×1, and 8×1. Since X has full column rank and consists of nonstochastic elements, the generalized least-squares estimator of β is:

$$\bar{\beta} = (X'V^{-1}X)^{-1}X'V^{-1}y \, , \tag{A.3}$$

where V is the 8×8 covariance matrix of the error vector in the right-hand side of (A.2). The estimator is obtained by solving the following set of linear equations (the generalized least-squares normal equations):

$$X'V^{-1}y = (X'V^{-1}X)\bar{\beta} \tag{A.4}$$

and the covariance matrix of the estimator is:

$$\mathcal{V}(\bar{\beta}) = (X'V^{-1}X)^{-1} \, . \tag{A.5}$$

To obtain numerical results we have to specify the covariance matrix V. We shall do so under the assumption that the n_{jkl}s are sufficiently large, so that we can rely on the asymptotic results derived above. The error vector of (A.2) has then zero mean, and its covariance matrix V is diagonal under the condition that the f_{jkl}s, and hence also the $\bar{L}_{jkl}$s, for different triples (j, k, l) are the results of independent drawings from different populations. In that case the matrix V^{-1} which occurs in (A.3)-(A.5) is also diagonal and its typical diagonal element is equal to the right-hand denominator of (A.1). A difficulty is that this element depends on the unknown

probability P_{jkl}. It will be shown below that the asymptotic properties of our coefficient estimator are not affected when we replace this P_{jkl} by f_{jkl}, and this modification implies that the typical diagonal element of V^{-1} then becomes w_{jkl} as defined in (3.2). A little algebra shows that the estimation equations (A.4) take the following form for the specification (A.2):

$$\begin{bmatrix} \Sigma_j\Sigma_k\Sigma_l w_{jkl}\hat{L}_{jkl} \\ \Sigma_k\Sigma_l w_{2kl}\hat{L}_{2kl} \\ \Sigma_j\Sigma_l w_{j2l}\hat{L}_{j2l} \\ \Sigma_j\Sigma_k w_{jk2}\hat{L}_{jk2} \end{bmatrix} = \begin{bmatrix} w_{...} & w_{2..} & w_{.2.} & w_{..2} \\ w_{2..} & w_{2..} & w_{22.} & w_{2.2} \\ w_{.2.} & w_{22.} & w_{.2.} & w_{.22} \\ w_{..2} & w_{2.2} & w_{.22} & w_{..2} \end{bmatrix} \begin{bmatrix} \bar{a} \\ \bar{\beta}_2 \\ \bar{\gamma}_2 \\ \bar{\delta}_2 \end{bmatrix}, \tag{A.6}$$

where dots used as subscripts indicate summation over the corresponding subscript.

Examples:

$$w_{...} = \sum_j\sum_k\sum_l w_{jkl}, \qquad w_{.22} = \sum_j w_{j22}.$$

The solution of equation (A.6) leads to the parameter estimates which are discussed in section 3. The 4×4 matrix on the right corresponds with $X'V^{-1}X$ in (A.4), and its inverse is the estimated asymptotic covariance matrix in view of (A.5). In the case of table 1 this matrix is:

$$10^{-4}\begin{bmatrix} 57.97 & -30.80 & -29.51 & -31.53 \\ \cdots & 38.82 & 17.08 & 6.43 \\ \cdots & \cdots & 38.44 & 5.02 \\ \cdots & \cdots & \cdots & 37.52 \end{bmatrix} \begin{matrix} a \\ \beta_2 \\ \gamma_2 \\ \delta_2 . \end{matrix} \tag{A.7}$$

Asymptotic evaluation of the weight approximations.—Write $n = \Sigma_j \Sigma_k \Sigma_l n_{jkl}$ for the total number of observations and $\theta_{jkl} = n_{jkl}/n$ for the proportion of observations which fall under the triple (j, k, l). In the asymptotic developments which follow we shall let n go to infinity and keep each θ_{jkl} constant. The cell frequencies thus increase proportionally.

On combining (A.6) and (A.2), one can readily verify that the vector of sampling errors of our coefficients,

$$(\bar{a} - a \quad \bar{\beta}_2 - \beta_2 \quad \bar{\gamma}_2 - \gamma_2 \quad \bar{\delta}_2 - \delta_2)', \tag{A.8}$$

is the same function of $\hat{L}_{jkl} - L_{jkl}$ as the estimator itself is of $\hat{L}_{jkl}$ $(j, k, l = 1, 2)$. Hence, when we multiply the sampling error (A.8) by $\sqrt{n}$, we can write this product as the inverse of the matrix:

$$\frac{1}{n}\begin{bmatrix} w_{...} & w_{2..} & w_{.2.} & w_{..2} \\ w_{2..} & w_{2..} & w_{22.} & w_{2.2} \\ w_{.2.} & w_{22.} & w_{.2.} & w_{.22} \\ w_{..2} & w_{2.2} & w_{.22} & w_{..2} \end{bmatrix}, \tag{A.9}$$

postmultiplied by the vector:

$$\begin{bmatrix} \Sigma_j\Sigma_k\Sigma_l(w_{jkl}/n)\sqrt{n}(\hat{L}_{jkl} - L_{jkl}) \\ \Sigma_k\Sigma_l(w_{2kl}/n)\sqrt{n}(\hat{L}_{2kl} - L_{2kl}) \\ \Sigma_j\Sigma_l(w_{j2l}/n)\sqrt{n}(\hat{L}_{j2l} - L_{j2l}) \\ \Sigma_j\Sigma_k(w_{jk2}/n)\sqrt{n}(\hat{L}_{jk2} - L_{jk2}) \end{bmatrix}. \tag{A.10}$$

Since f_{jkl} converges in probability to P_{jkl} as n (and hence n_{jkl}) increases indefinitely, and since

$$\frac{w_{jkl}}{n} = \theta_{jkl} f_{jkl}(1 - f_{jkl}) \tag{A.11}$$

is a continuous function of f_{jkl}, the ratio w_{jkl}/n converges in probability to $\theta_{jkl} P_{jkl}(1 - P_{jkl})$; that is, to precisely the same expression as that which would be obtained if the matrix V of (A.3) were based on the variance (A.1). It follows that the matrix (A.9) as well as its inverse then also converge to the corresponding matrices based on (A.1). The vector (A.10) by which this inverse is postmultiplied consists of four elements, each of which is equal to a sum of w_{jkl}/n (with the probability limit mentioned above) multiplied by $\sqrt{n}\ (\hat{L}_{jkl} - L_{jkl})$, which has a normal limiting distribution. The standard results on statistical convergence then guarantee that the sampling error (A.8) multiplied by $\sqrt{n}$ converges in distribution to a four-dimensional normal variate with zero mean vector and a covariance matrix which is estimated consistently by the inverse of the matrix (A.9). In other words, the coefficient estimator defined in (A.6) is asymptotically normally distributed with a mean vector equal to the corresponding parameter vector and a covariance matrix which is estimated by the inverse of the 4×4 matrix in the right-hand side of (A.6)

B. The Weighted Least-Squares Method for Table 2

The case of table 2 is identical with that of table 1 except for the third value of the third determining factor. This means that in equation (A.2) we have to enlarge the left-hand vector by inserting $\hat{L}_{113}$ below $\hat{L}_{112}$, $\hat{L}_{123}$ below $\hat{L}_{122}$, and so on. Similarly, the three successive matrices which occur in the right-hand side of (A.2) become of order 12×5, 5×1, and 12×1, and equation (A.6) now contains $\hat{\delta}_3$ as an additional (fifth) element in the coefficient vector on the right. It is premultiplied by the following 5×5 matrix:

$$\begin{bmatrix} w_{...} & w_{2..} & w_{.2.} & w_{..2} & w_{..3} \\ w_{2..} & w_{2..} & w_{22.} & w_{2.2} & w_{2.3} \\ w_{.2.} & w_{22.} & w_{.2.} & w_{.22} & w_{.23} \\ w_{..2} & w_{2.2} & w_{.22} & w_{..2} & 0 \\ w_{..3} & w_{2.3} & w_{.23} & 0 & w_{..3} \end{bmatrix}. \tag{B.1}$$

The inverse of the matrix (B.1), which is shown in (3.3), is postmultiplied by a vector which is identical with the left-hand vector in (A.6), except that $\Sigma_j \Sigma_k w_{jk3}\bar{L}_{jk3}$ is added as a fifth element. (Note that all summations over l refer to the range 1, 2, and 3). The formal statistical analysis of this case conforms with that of Appendix A.

C. The Weighted Least-Squares Method for Table 1 (With Interaction)

When the specification (4.4) is used, the parameter vector of (A.2) is to be modified to $[\alpha\ \beta_{12}\ \beta_{21}\ \beta_{22}\ \gamma_2]'$ and the 8×4 matrix on the right to the transpose of the following 5×8 matrix:

$$\begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 0 & 1 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 & 0 & 0 & 1 & 1 \end{bmatrix} \tag{C.1}$$

while the other two vectors of (A.2) remain unchanged.

The result of this modification is that the estimation equations (A.6) become:

$$\begin{bmatrix} \Sigma_j \Sigma_k \Sigma_l w_{jkl}\bar{L}_{jkl} \\ \Sigma_k w_{1k2}\bar{L}_{1k2} \\ \Sigma_k w_{2k1}\bar{L}_{2k1} \\ \Sigma_k w_{2k2}\bar{L}_{2k2} \\ \Sigma_j \Sigma_l w_{j2l}\bar{L}_{j2l} \end{bmatrix} = \begin{bmatrix} w_{..} & w_{1\,2} & w_{2.1} & w_{2\,2} & w_{.2.} \\ w_{1.2} & w_{1.2} & 0 & 0 & w_{122} \\ w_{2\,1} & 0 & w_{2.1} & 0 & w_{221} \\ w_{2.2} & 0 & 0 & w_{2.2} & w_{222} \\ w_{\,2.} & w_{122} & w_{221} & w_{222} & w_{.2.} \end{bmatrix} \begin{bmatrix} \bar{\alpha} \\ \bar{\beta}_{12} \\ \bar{\beta}_{21} \\ \bar{\beta}_{22} \\ \bar{\gamma}_2 \end{bmatrix}. \tag{C.2}$$

The inverse of the 5×5 matrix on the right is the estimated asymptotic covariance matrix, which replaces the matrix (A.7) when the interaction specification (4.4) is used. Its value is:

$$10^{-4}\begin{bmatrix} 83.52 & -64.09 & -74.42 & -76.97 & -31.15 \\ \dots & 79.01 & 62.02 & 62.60 & 7.11 \\ \dots & \dots & 113.28 & 70.24 & 19.88 \\ \dots & \dots & \dots & 97.58 & 23.04 \\ \dots & \dots & \dots & \dots & 38.55 \end{bmatrix} \begin{matrix} \alpha \\ \beta_{12} \\ \beta_{21} \\ \beta_{22} \\ \gamma_2\,. \end{matrix} \tag{C.3}$$

The standard errors discussed in the last paragraph of section 4 are based on this matrix.

D. Asymptotic Theory for Table 4

Equation (5.2) defines $\bar{\gamma}_1$ as a function of four $\bar{L}$'s. Under the usual assumption of independent random drawings from binomial populations, these $\bar{L}$'s are asymptotically normally and independently distributed with means equal to the true L's and variances of the form (A.1). The derivatives of $\bar{\gamma}_1$ with respect to the four $\bar{L}$'s are

$$\begin{aligned} \partial\bar{\gamma}_1/\partial\bar{L}_{21} &= -\partial\bar{\gamma}_1/\partial\bar{L}_{11} = a\,, \\ \partial\bar{\gamma}_1/\partial\bar{L}_{22} &= -\partial\bar{\gamma}_1/\partial\bar{L}_{12} = -(\bar{L}_{21} - \bar{L}_{11})a^2\,, \end{aligned} \tag{D.1}$$

where

$$a = (\bar{L}_{22} - \bar{L}_{12})^{-1}\,. \tag{D.2}$$

Given the independence of the $\bar{L}$'s, the asymptotic variance of $\bar{\gamma}_1$ is then found by taking a weighted sum of the asymptotic variances of the $\bar{L}$'s with weights equal to the squares of the derivatives. The estimated asymptotic variance of $\bar{\gamma}_1$ is thus $a^2/[n_{11}f_{11}(1 - f_{11})] + a^2/[n_{21}f_{21}(1 - f_{21})] + [(\bar{L}_{21} - \bar{L}_{11})^2a^4]/[n_{12}f_{12}(1 - f_{12})] + [(\bar{L}_{21} - \bar{L}_{11})^2a^4]/n_{22}f_{22}(1 - f_{22})]$, which is 0.023 for the data of table 4. Needless to say, the actual numbers of observations which form the basis of this asymptotic result are not particularly large.

E. The χ^2 Test

The test statistic expressed in terms of sampling errors and the random components of observed logits.—The probability estimates implied by the linear logit model are obtained from

$$\log \bar{P}_{jkl}/(1 - \bar{P}_{jkl}) = \bar{a} + \bar{\beta}_j + \bar{\gamma}_k + \bar{\delta}_l\,, \tag{E.1}$$

and the observed logits may be expressed as follows in view of (A.2):

$$\log f_{jkl}/(1 - f_{jkl}) = a + \beta_j + \gamma_k + \delta_l + (\bar{L}_{jkl} - L_{jkl})\,. \tag{E.2}$$

Consider the difference of the left-hand sides of (E.2) and (E.1):

$$\begin{aligned} &\log f_{jkl}/(1 - f_{jkl}) - \log \bar{P}_{jkl}/(1 - \bar{P}_{jkl}) = \log f_{jkl}/\bar{P}_{jkl} \\ &\quad - \log (1 - f_{jkl})/(1 - \bar{P}_{jkl}) \approx (f_{jkl} - \bar{P}_{jkl})/\bar{P}_{jkl} \\ &\quad + (f_{jkl} - \bar{P}_{jkl})/1 - \bar{P}_{jkl} = (f_{jkl} - \bar{P}_{jkl})/[\bar{P}_{jkl}(1 - \bar{P}_{jkl})]\,, \end{aligned} \tag{E.3}$$

where the $\approx$ sign on the second line indicates that second and higher order terms in the expansion of the logarithms are disregarded. This is asymptotically justified, because such terms converge in probability to 0 relative to the first-order terms. Then substitute the right-hand sides of (E.2) and (E.1) into (E.3):

$$\begin{aligned} (f_{jkl} - \bar{P}_{jkl})/[\bar{P}_{jkl}(1 - \bar{P}_{jkl})] &\approx (\bar{L}_{jkl} - L_{jkl}) - (\bar{a} - a) \\ &\quad - (\bar{\beta}_j - \beta_j) - (\bar{\gamma}_k - \gamma_k) - (\bar{\delta}_l - \delta_l)\,. \end{aligned} \tag{E.4}$$

The χ^2 test statistic based on the $\bar{P}$'s is

$$\sum_j \sum_k \sum_l [n_{jkl}(f_{jkl} - \bar{P}_{jkl})^2]/[\bar{P}_{jkl}(1 - \bar{P}_{jkl})]\,. \tag{E.5}$$

This statistic is thus a weighted sum of squares of the left-hand sides of (E.4) for the various (j, k, l) combinations, the weights being of the form $n_{jkl}\bar{P}_{jkl}(1 - \bar{P}_{jkl})$, and the left-hand side of (E.4) is in turn asymptotically equal to the sampling error of a logit estimate plus a linear combination of the sampling errors of the coefficients.

Derivation of the asymptotic χ^2 distribution.—It will be shown below that $\sqrt{n_{jkl}}(f_{jkl} - \bar{P}_{jkl})$ converges in distribution to a normal variate with zero mean. Hence the numerator of the ratio after the summation signs of (E.5) is asymptotically distributed as a χ^2. Since the denominator converges in distribution to the same expression in the true probabilities, our test statistic has thus the same asymptotic distribution as

$$\sum_j\sum_k\sum_l[n_{jkl}(f_{jkl} - \bar{P}_{jkl})^2]/[P_{jkl}(1 - P_{jkl})]$$
$$= \sum_j\sum_k\sum_l n_{jkl}P_{jkl}(1 - P_{jkl})\{(f_{jkl} - \bar{P}_{jkl})/[P_{jkl}(1 - P_{jkl})]\}^2 . \tag{E.6}$$

We return to the notation described below (A.2) with its matrices y, X, β, $\bar{\beta}$, ϵ, and V. The ratio in braces in (E.6) is asymptotically equivalent to the right-hand side of (E.4),[23] which is one of the elements of the vector

$$\epsilon - X(\bar{\beta} - \beta) = y - X\bar{\beta} . \tag{E.7}$$

The factor by which the ratio is multiplied in (E.6) is the corresponding diagonal element of V^{-1}. Consequently, the expression on the second line of (E.6) is

$$(y - X\bar{\beta})'V^{-1}(y - X\bar{\beta}) , \tag{E.8}$$

which is nothing but a quadratic form in the generalized least-squares residual vector with the inverse of the error covariance matrix as matrix. It follows directly from the standard normal theory of generalized least squares that this quadratic form is distributed as χ^2 with a number of degrees of freedom equal to the number of rows of X minus the number of its columns.

F Formulation of the General Multiple Response Model

When there are R possible responses with conditional probabilities $P_{1|jk}, \ldots, P_{R|jk}$ given $X = X_j$, $Y = Y_k$, the linear logit specification (8.3) under the normalization (8.4) may be written:

$$\log P_{r|jk}/P_{1|jk} = \alpha_r + \beta_{jr} + \gamma_{kr} \qquad r = 2, \ldots, R . \tag{F.1}$$

The additional normalization (8.7) now becomes

$$\beta_{1r} = \gamma_{1r} = 0 \qquad r = 1, \ldots, R . \tag{F.2}$$

The remaining free parameters are $\alpha_2, \ldots, \alpha_R$, $\beta_{22}, \ldots, \beta_{2R}$, $\gamma_{22}, \ldots, \gamma_{2R}$, and hence $3(R - 1)$ in number. The observed relative frequencies $f_{1|jk}, \ldots, f_{R|jk}$ add

[23] It follows from (E.4) that $f_{jkl} - \bar{P}_{jkl}$ is asymptotically distributed as $P_{jkl}(1 - P_{jkl})$ times the right-hand side of that equation. This right-hand side is asymptotically normal with zero mean and variance of order $1/n_{jkl}$. This proves the statement, made above in the text, that $\sqrt{n_{jkl}}\,(f_{jkl} - \bar{P}_{jkl})$ converges in distribution to a normal variate with 0 mean.

up to 1, and hence supply $R - 1$ unconstrained figures for each pair (j, k), so that their total is $4(R - 1)$. There are therefore $R - 1$ df.

More generally, when there are K determining factors rather than two (X and Y) in such a way that the hth factor takes N_h values, the number of cells for which f's can be computed is $N_1 N_2 \ldots N_k$, and hence the total number of free f's is

$$(R - 1)N_1N_2 \ldots N_k . \tag{F.3}$$

For each r in (F.1) we have now one a_r and $N_h - 1$ coefficients describing the impact of the various values of the hth factor ($h = 1, \ldots, K$). The total number of coefficients for each r is thus $\Sigma N_h - K + 1$, and hence for all r's:

$$(R - 1)\left(\sum_{h=1}^{K} N_h - K + 1\right). \tag{F.4}$$

The number of degrees of freedom is found by subtracting (F.3) from (F.4).

G. The Generalized Least-Squares Method in the Multiple Response Case

The procedure.—Equations (9.2) and (9.3) may be written in matrix form as follows for all subscript pairs (j, k):

$$\begin{bmatrix} \bar{L}_{21|11} \\ \bar{L}_{31|11} \\ \bar{L}_{21|12} \\ \bar{L}_{31|12} \\ \bar{L}_{21|21} \\ \bar{L}_{31|21} \\ \bar{L}_{21|22} \\ \bar{L}_{31|22} \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 & 0 & 1 \\ 1 & 0 & 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 & 0 & 1 \end{bmatrix} \begin{bmatrix} a_2 \\ a_3 \\ \beta_{22} \\ \beta_{23} \\ \gamma_{22} \\ \gamma_{23} \end{bmatrix} + \text{error vector} \tag{G.1}$$

The error vector consists of elements of the form $\bar{L}_{r1|jk} - L_{r1|jk}$, the subscripts of which are identical with those of the corresponding element of the vector on the left.

We can write (G.1) in the form $y = X\beta + \epsilon$, where y is the eight-element vector on the left and X, β, and ϵ are matrices whose successive orders are 8×6, 6×1, and 8×1. It is readily verified that X can be partitioned as follows:

$$X = \begin{bmatrix} \mathrm{I} & 0 & 0 \\ \mathrm{I} & 0 & \mathrm{I} \\ \mathrm{I} & \mathrm{I} & 0 \\ \mathrm{I} & \mathrm{I} & \mathrm{I} \end{bmatrix}, \tag{G.2}$$

where all unit and zero submatrices are of order 2×2.[24] To estimate β we assume that each n_{jk} is sufficiently large, so that we can act as if the distribution of ϵ is identical with its asymptotic distribution, which has zero means. The generalized least-squares estimator of β is then

$$\bar{\beta} = (X'V^{-1}X)^{-1}X'V^{-1}y, \tag{G.3}$$

where V is the asymptotic covariance matrix of ϵ, and the asymptotic covariance matrix of $\bar{\beta}$ is $(X'V^{-1}X)^{-1}$.

To determine V we note that any pair of L's in (G.1) is by assumption independent when they have different sets of second subscripts, because they are then obtained by drawing from different populations. This means that V is a block-diagonal matrix with four blocks along the diagonal: V_{11}, V_{12}, V_{21}, and V_{22}, all of order 2×2. (The subscripts j, k, of these V_{jk}s are the second set of subscripts of $\bar{L}_{r1|jk}$ on the left in [G.1].) It follows that V^{-1} is also block-diagonal and that its successive diagonal blocks are V_{11}^{-1}, V_{12}^{-1}, V_{21}^{-1}, and V_{22}^{-1}. On combining this with (G.2) we find:

$$X'V^{-1}X = \begin{bmatrix} V_{11}^{-1} + V_{12}^{-1} + V_{21}^{-1} + V_{22}^{-1} & V_{21}^{-1} + V_{22}^{-1} & V_{12}^{-1} + V_{22}^{-1} \\ V_{21}^{-1} + V_{22}^{-1} & V_{21}^{-1} + V_{22}^{-1} & V_{22}^{-1} \\ V_{12}^{-1} + V_{22}^{-1} & V_{22}^{-1} & V_{12}^{-1} + V_{22}^{-1} \end{bmatrix}, \tag{G.4}$$

the inverse of which is the asymptotic covariance matrix of $\bar{\beta}$ in view of the statement made below (G.3). The problem is thus to find a numerical value for V_{jk}^{-1}. This is considered below, where it turns out that for sufficiently large n_{jk} one may substitute W_{jk} defined in (9.4) for V_{jk}^{-1}.

To obtain the point estimates defined in (G.3) one has to postmultiply the inverse of the matrix (G.4) by the vector $X'V^{-1}y$. Consider first the vector $V^{-1}y$ and replace V_{jk}^{-1} by W_{jk}; then this vector consists of four two-element subvectors of the form:

$$W_{jk}\begin{bmatrix} \bar{L}_{21|jk} \\ \bar{L}_{31|jk} \end{bmatrix} = n_{jk}\begin{bmatrix} f_{2|jk}(\log f_{2|jk} + H_{jk}) \\ f_{3|jk}(\log f_{3|jk} + H_{jk}) \end{bmatrix}, \tag{G.5}$$

where H_{jk} is the entropy of the responses in the cell (j, k):

$$H_{jk} = -\sum_{r=1}^{3} f_{r|jk} \log f_{r|jk}. \tag{G.6}$$

The vector $X'V^{-1}y$ consists of three subvectors which contain two elements each. The first subvector is the double sum over j and k of the vector (G.5); in the second we have $j = 2$ and sum over k, and in the third $k = 2$ and a sum over j.

Asymptotic evaluation of the procedure.—The matrix V_{jk} (one of the diagonal blocks of V) is the asymptotic covariance matrix of the vector

$$\begin{bmatrix} \bar{L}_{21|jk} \\ \bar{L}_{31|jk} \end{bmatrix} = \begin{bmatrix} \log (f_{2|jk}/f_{1|jk}) \\ \log (f_{3|jk}/f_{1|jk}) \end{bmatrix}. \tag{G.7}$$

[24] When there are R possible responses as in equation (F.1), the submatrices are square of order $R - 1$.

To simplify the notation we shall delete the subscripts j and k temporarily, so that $f_{r|jk}$, $P_{r|jk}$, and n_{jk} become f_r, P_r, and n, respectively.

Under our assumptions the random variables (f_1, f_2, f_3) have asymptotically a three-variate normal distribution with means (P_1, P_2, P_3) and the following covariance matrix:

$$\frac{1}{n}\begin{bmatrix} P_1(1-P_1) & -P_1P_2 & -P_1P_3 \\ -P_2P_1 & P_2(1-P_2) & -P_2P_3 \\ -P_3P_1 & -P_3P_2 & P_3(1-P_3) \end{bmatrix}. \tag{G.8}$$

The conditional logits of (G.7) are functions of the f's which have continuous second-order derivatives in an area which contains $f_r = P_r$ $(r = 1, 2, 3)$ as an interior point, provided that none of the P's is 0 or 1. (This proviso is fulfilled under the linear conditional logit specification.) Under this condition the vector (G.7) will be asymptotically binormally distributed, with a mean vector whose elements are the true logits and a covariance matrix which may be described as follows. Consider the 2×3 matrix of derivatives of the vector (G.7) with respect to (f_1, f_2, f_3):

$$\begin{bmatrix} \partial\bar{L}_{21}/\partial f_1 & \partial\bar{L}_{21}/\partial f_2 & \partial\bar{L}_{21}/\partial f_3 \\ \partial\bar{L}_{31}/\partial f_1 & \partial\bar{L}_{31}/\partial f_2 & \partial\bar{L}_{31}/\partial f_3 \end{bmatrix} = \begin{bmatrix} -1/f_1 & 1/f_2 & 0 \\ -1/f_1 & 0 & 1/f_3 \end{bmatrix}.$$

The matrix of derivative evaluated at $f_r = P_r$ $(r = 1, 2, 3)$ is thus:

$$\begin{bmatrix} -1/P_1 & 1/P_2 & 0 \\ -1/P_1 & 0 & 1/P_3 \end{bmatrix}. \tag{G.9}$$

The asymptotic covariance matrix of the vector (G.7) is then found by premultiplying the matrix (G.8) by (G.9) and postmultiplying by the transpose of (G.9). The result (with subscripts j and k added again) is

$$V_{jk} = \frac{1}{n_{jk}}\begin{bmatrix} \dfrac{1}{P_{1|jk}} + \dfrac{1}{P_{2|jk}} & \dfrac{1}{P_{1|jk}} \\ \dfrac{1}{P_{1|jk}} & \dfrac{1}{P_{1|jk}} + \dfrac{1}{P_{3|jk}} \end{bmatrix}, \tag{G.10}$$

the inverse of which is:

$$V_{jk}^{-1} = n_{jk}\begin{bmatrix} P_{2|jk}(1-P_{2|jk}) & -P_{2|jk}P_{3|jk} \\ -P_{2|jk}P_{3|jk} & P_{3|jk}(1-P_{3|jk}) \end{bmatrix}. \tag{G.11}$$

This is identical with W_{jk} defined in (9.4), except that the P's are replaced by f's there. The asymptotic justification is analogous to that of the corresponding replacement in the logit analysis for the dichotomous case.

H. The Constrained Case

When the constraint (10.1) is imposed, equation (G.1) is simplified due to the fact that α_1 and α_3 are the only unknown parameters. The simplest procedure is to re-

place $\bar{L}_{r1|jk}$ on the left by $\bar{L}_{r1|jk} - \beta_{jr} - \gamma_{kr}$, where β_{jr} and γ_{kr} are specified in accordance with (10.1). The 8×6 matrix on the right in (G.1) then becomes of order 8×2, and consists of four unit matrices of order 2×2. The matrix $X'V^{-1}X$ is reduced to its leading 2×2 submatrix, estimated as $\Sigma_j \Sigma_k W_{jk}$, the inverse of which is the asymptotic covariance matrix of the estimates of α_2 and α_3. To obtain these estimates we should multiply the inverse by $X'V^{-1}y$, where X is the 8×2 matrix mentioned above and y is the left-hand vector of (G.1) with $\beta_{jr} + \gamma_{kr}$ subtracted from $\bar{L}_{r1|jk}$. Thus, to obtain the two-element vector $X'V^{-1}y$, we subtract

$$W_{jk}\begin{bmatrix}\beta_{j2} + \gamma_{k2} \\ \beta_{j3} + \gamma_{k3}\end{bmatrix}$$

from the vector (G.5), and then sum the difference over j and k.

I The Interaction Case

We write equations (11.1) and (11.3) as follows with estimated conditional logits on the left:

$$\bar{L}_{21|jk} = \alpha_2 + \beta_{j2} + \gamma_{k2} + (-1)^{j+k}\delta + (\bar{L}_{21|jk} - L_{21|jk}) \tag{I.1}$$

$$\bar{L}_{31|jk} = \alpha_3 + \beta_{j3} + \gamma_{k3} + 2(-1)^{j+k}\delta + (\bar{L}_{31|jk} - L_{31|jk})\ , \tag{I.2}$$

where the normalization (8.4) is used as before. If we also apply the normalization (8.7), we can write equation (I.1)-(I.2) for all pairs (j, k) in the form (G.1) with two modifications. First, we add δ as a seventh element to the parameter vector; second, the matrix (G.2) by which this vector is premultiplied is enlarged by an additional column:

$$X = \begin{bmatrix} I & 0 & 0 & q \\ I & 0 & I & -q \\ I & I & 0 & -q \\ I & I & I & q \end{bmatrix} \quad \text{where} \quad q = \begin{bmatrix}1 \\ 2\end{bmatrix}. \tag{I.3}$$

The matrix $X'V^{-1}X$ is now symmetric of order 7×7, and the seventh column is

$$\begin{bmatrix} (V_{11}^{-1} - V_{12}^{-1} - V_{21}^{-1} + V_{22}^{-1})q \\ (-V_{21}^{-1} + V_{22}^{-1})q \\ (-V_{12}^{-1} + V_{22}^{-1})q \\ q'(V_{11}^{-1} + V_{12}^{-1} + V_{21}^{-1} + V_{22}^{-1})q \end{bmatrix}. \tag{I.4}$$

The inverse of the 7×7 matrix (with V_{jk}^{-1} replaced by W_{jk}) is the estimated asymptotic covariance matrix of the parameter estimates, which takes the following value

for the evaluation of Negro MPs:

$$10^{-4}\begin{bmatrix} 167 & 150 & -70 & -67 & -129 & -117 & 8.9 \\ \cdots & 191 & -68 & -97 & -114 & -139 & 14.9 \\ \cdots & \cdots & 107 & 98 & 11 & 18 & -10.6 \\ \cdots & \cdots & \cdot & 137 & 15 & 23 & -16.6 \\ \cdots & \cdots & \cdots & \cdots & 151 & 130 & -3.6 \\ \cdots & \cdots & \cdots & \cdots & \cdots & 160 & -8.5 \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdot & 7.42 \end{bmatrix} \begin{matrix} \alpha_2 \\ \alpha_3 \\ \beta_{22} \\ \beta_{23} \\ \gamma_{22} \\ \gamma_{23} \\ \delta \end{matrix} \qquad (I.5)$$

and for white MPs:

$$10^{-4}\begin{bmatrix} 71 & 47 & -34 & -24 & -51 & -36 & 4.9 \\ \cdot & 101 & -26 & -61 & -34 & -65 & 8.9 \\ \cdots & \cdot & 54 & 37 & 2 & 8 & -6.4 \\ \cdots & \cdots & \cdot & 87 & 4 & 7 & -9.3 \\ \cdot & \cdot & \cdot & \cdots & 64 & 40 & -2.1 \\ \cdot & \cdot & \cdot & & \cdots & 87 & -7.0 \\ \cdot & \cdot & \cdots & \cdot & \cdots & & 5.45 \end{bmatrix} \begin{matrix} \alpha_2 \\ \alpha_3 \\ \beta_{22} \\ \beta_{23} \\ \gamma_{22} \\ \gamma_{23} \\ \delta\,. \end{matrix} \qquad (I.6)$$

The inverse is postmultiplied by the vector $X'V^{-1}y$, the first six elements of which are identical with those described above in the paragraph containing equations (G.5) and (G.6). The seventh element is

$$\sum_j \sum_k (-1)^{j+k} n_{jk} [f_{2|jk}(\log f_{2|jk} + H_{jk}) + 2f_{3|jk}(\log f_{3|jk} + H_{jk})] \,, \qquad (I.7)$$

where H_{jk} is defined in (G.6). The result is summarized in table A1. The β_{jh} estimates have become somewhat smaller, but the deviations from the values (10.1) do not appear to be significant. The χ^2 for Negro MPs is 0.62 and that for white MPs is 0.02, which are low values even for 1 df.

The χ^2 test of the hypothesis $\delta = 0.05$ and (10.1) requires a procedure which is analogous to that described in Appendix H. The only difference is that we replace $\bar{L}_{21|jk}$ and $\bar{L}_{31|jk}$ by $\bar{L}_{21|jk} - \beta_{j2} - \gamma_{k2} - (-1)^{j+k}\delta$ and $\bar{L}_{31|jk} - \beta_{j3} - \gamma_{k3} - 2(-1)^{j+k}\delta$, respectively, where the β's and γ's and δ take the values of the hypothesis tested.

J Proof of a Lemma

Assume first that $a_1, \ldots, a_N$ in (13.7) are strictly positive, and define

$$c_i = (b_i - a_i)/a_i\,, \qquad i = 1, \ldots, N, \quad \text{(J.1)}$$

so that $\Sigma_i\, a_i\, c_i = 0$. Then:

$$\sum_{i=1}^{N} a_i \log a_i/b_i = \sum_{i=1}^{N} a_i f(c_i)\,, \quad \text{where} \quad f(x) = x - \log(1 + x)\,. \quad \text{(J.2)}$$

The nonnegativity of the left-hand expression follows from $f(x) \geq 0$ for each x. Also, $f(x) = 0$ if and only if $x = 0$, which means that the expression vanishes if and only if $c_i = 0$, or equivalently, $a_i = b_i$ for $i = 1, \ldots, N$. To prove these properties of $f(\ )$, verify that $f(0) = 0$ and $f'(x) = 1 - (1 + x)^{-1} = x/(1 + x)$. Thus, $f(\ )$ is 0 at $x = 0$, and its derivative is positive (negative) for every positive (negative) value of x. Hence $f(x) > 0$ for every $x \neq 0$.

When $a_i = 0$ for some i, we apply the limiting process $a_i \to 0$ to conclude that $a_i \log (a_i/b_i)$ converges to 0 unless $b_i = 0$. When $a_i = b_i = 0$ for some i, we delete the ith term in the sum (J.2). When $a_i > b_i = 0$ for some i, the expression (J.2) is infinitely large.

TABLE A1

PARAMETER ESTIMATES FOR THE INTERACTION SPECIFICATION

	Negro MPs	White MPs		Negro MPs	White MPs
α_2	1 72 (13)	0 35 (08)	α_3	1 47 (.14)	−0 27 (10)
β_{22}	0 10 (10)	0 18 (07)	β_{23}	0 62 (12)	0 65 (09)
γ_{22}	−0 41 (12)	−0 32 (08)	γ_{23}	−0 76 (13)	−0 68 (09)
δ	0 072 (027)	0 074 (023)			

K. The Sign of a Partial Entropy Reduction

Consider first the two-factor case. The partial entropy reduction due to X, given Y, is

$$\begin{aligned} H_Y(D) - H_{XY}(D) &= \sum_r \sum_k p_{r.k} \log p_{..k}/p_{r.k} - \sum_r \sum_j \sum_k p_{rjk} \log p_{.jk}/p_{rjk} \\ &= \sum_r \sum_j \sum_k p_{rjk} \log p_{rjk}/(p_{r.k}p_{.jk}/p_{..k}) \geq 0\,. \end{aligned} \quad \text{(K.1)}$$

The inequality sign follows from the lemma proved in Appendix J, because the triple sum on the second line is of the form $\Sigma_i\, a_i \log (a_i/b_i)$, where $a_i = p_{rjk}$ and $b_i = p_{r.k}\, p_{.jk}/p_{..k}$. Note that this (r, j, k) interpretation of a_i and b_i amounts to nonnegative fractions which add up to 1 when summed over r, j, and k.

The partial reduction (K.1) vanishes if and only if the logarithm on the second line is $\log 1 = 0$ for each subscript combination. This amounts to:

$$p_{rjk} = p_{r.k}p_{.jk}/p_{..k} \quad \text{or} \quad p_{rjk}/p_{.jk} = p_{r.k}/p_{..k} \qquad \text{(K.2)}$$
$$\text{for each triple} \quad (r, j, k)\,.$$

The second equation in (K.2) has the conditional probability $P_{r|jk}$ on the left, and the right-hand side indicates that it is independent of the condition $X = X_j$.

In the three-factor case we have the following partial entropy reduction due to X, given Y and Z:

$$\begin{aligned} H_{YZ}(D) - H_{XYZ}(D) &= \sum_r \sum_k \sum_l p_{r.kl} \log p_{..kl}/p_{r.kl} \\ &\quad - \sum_r \sum_j \sum_k \sum_l p_{rjkl} \log p_{.jkl}/p_{rjkl} \\ &= \sum_r \sum_j \sum_k \sum_l p_{rjkl} \log p_{rjkl}/(p_{r.kl}p_{.jkl}/p_{..kl}) \,. \end{aligned} \tag{K.3}$$

This is nonnegative for the same reason. It vanishes if and only if

$$p_{rjkl}/p_{.jkl} = p_{r.kl}/p_{..kl} \quad \text{for each} \quad (r, j, k, l) \,, \tag{K.4}$$

which means that the conditional probability $P_{r|jkl}$ is independent of the condition $X = X_j$. The extension to four and more determining factors will be obvious.

L. The Dependence Effect

The expected mutual information.—Let (X, Y) be a pair of random variables and write P_{jk} for the probability that $X = X_j$ and $Y = Y_k$. The expected mutual information of this bivariate distribution is defined as

$$I(X, Y) = \sum_j \sum_k p_{jk} \log p_{jk}/p_{j.}p_{.k} \,, \tag{L.1}$$

where $p_{j.}$ and $p_{.k}$ are marginal probabilities. The double sum in the right-hand side can be written as $\Sigma_i\, a_i \log (a_i/b_i)$, where $a_i = p_{jk}$ and $b_i = p_{j.}\, p_{.k}$. It is therefore nonnegative and it vanishes if and only if $p_{jk} = p_{.j}p_{.k}$ for each pair (j, k), which is the case of stochastic independence. In fact, $I(X, Y)$ is frequently used as a measure for the degree to which X and Y are dependent, and we shall use it for this purpose in what follows.

The dependence effect in the two-factor case.—Consider the partial entropy reduction (K.1) as well as the analogous reduction due to Y, given X:

$$H_X(D) - H_{XY}(D) = \sum_r \sum_j \sum_k p_{rjk} \log p_{rjk}/(p_{rj.}p_{.jk}/p_{.j.}) \,. \tag{L.2}$$

The sum of the two is the total partial entropy reduction:

$$\sum_r \sum_j \sum_k p_{rjk} \log p_{.j.}p_{..k}p^2_{rjk}/p_{rj.}p_{r.k}p^2_{.jk.}, \tag{L.3}$$

which should be compared with the entropy reduction due to X and Y jointly:

$$\begin{aligned} H(D) - H_{XY}(D) &= -\sum_r p_{r..} \log p_{r..} - \sum_r \sum_j \sum_k p_{rjk} \log p_{.jk}/p_{rjk} \\ &= \sum_r \sum_j \sum_k p_{rjk} \log p_{rjk}/p_{r..}p_{.jk} \,. \end{aligned} \tag{L.4}$$

The excess of the joint reduction (L.4) over the total partial reduction (L.3) is the dependence effect:

$$\begin{aligned}\Delta_{XY}(D) &= \sum_r \sum_j \sum_k p_{rjk} \log p_{rj.}p_{r.k}p_{.jk}/p_{r..}p_{rjk}p_{.j.}p_{..k} \\ &= \sum_j \sum_k p_{.jk} \log p_{.jk}/p_{.j.}p_{..k} - \sum_r \sum_j \sum_k p_{rjk} \log p_{r..}p_{rjk}/p_{rj.}p_{r.k} .\end{aligned} \tag{L.5}$$

The first expression on the second line is $I(X, Y)$, the expected mutual information of X and Y in their marginal distribution. The second can be written as follows:

$$\sum_r p_{r..} \sum_j \sum_k \frac{p_{rjk}}{p_{r..}} \log \frac{p_{rjk}/p_{r..}}{\frac{p_{rj.}}{p_{r..}} \frac{p_{r.k}}{p_{r}}} ,$$

or equivalently:

$$I_D(X, Y) = \sum_r p_{r..} I_{D_r}(X, Y) , \tag{L.6}$$

where

$$I_{D_r}(X, Y) = \sum_j \sum_k \frac{p_{rjk}}{p_{r..}} \log \frac{p_{rjk}/p_{r..}}{\frac{p_{rj.}}{p_{r..}} \frac{p_{r.k}}{p_{r..}}} . \tag{L.7}$$

Evidently, $I_{D_r}(X, Y)$ is the conditional expected mutual information of X and Y given $D = D_r$, which means that it measures the degree of dependence of X and Y in their joint conditional distribution given $D = D_r$. In (L.6) we take a weighted average with the probabilities of the conditions as weights, so that $I_D(X, Y)$ is to be interpreted as the *average conditional expected mutual information* of X and Y, given D. Therefore, the excess of the joint entropy reduction (L.4) over the total partial reduction (L.3) is

$$\Delta_{XY}(D) = I(X, Y) - I_D(X, Y) . \tag{L.8}$$

The dependence effect is thus positive (negative) when there is more (less) dependence in the marginal distribution of X and Y than in their conditional distributions on the average.

In the case of table 8 we have:

$$\begin{aligned} I(X, Y) &= 0.00014 \text{ (Negro MPs)} \quad & I_D(X, Y) &= 0.00120 \text{ (Negro MPs)} \\ &\ 0.00054 \text{ (white MPs)} & &\ 0.00206 \text{ (white MPs)} . \end{aligned} \tag{L.9}$$

There is thus a little more dependence in the case of white MPs than in that of the Negro MPs, both marginally and conditionally on the average.[25] In both cases the dependence effect is negative: -0.00106 for Negro MPs and -0.00152 for white MPs, in agreement with the results shown in table 12.

[25] Note that the marginal distributions of X and Y of the two tables would have been identical if the same soldiers had answered the questions on which the tables are based. The discrepancies between the two marginal distributions are thus exclusively due to different rates of nonresponse. The conditional distributions of X and Y, given $D = D_r$, are obviously different for the two tables.

Some simple examples are sufficient to show that the dependence effect can be of either sign. Consider the case of two values for each of the variables D, X, and Y, and let $p_{111} = p_{222} = \frac{1}{2}$, so that all other p_{rjk}s vanish. The conditional distributions of X and Y are:

given $D = D_1$:

	X_1	X_2	
Y_1	1.0	0.0	1.0
Y_2	0.0	0.0	0.0
	1.0	0.0	1.0

; given $D = D_2$:

	X_1	X_2	
Y_1	0.0	0.0	0.0
Y_2	0.0	1.0	1.0
	0.0	1.0	1.0

.

Both distributions are characterized by independence and hence $I_D(X, Y) = 0$. But $I(X, Y) = \log 2$, because the marginal distribution of (X, Y) is:

	X_1	X_2	
Y_1	0.5	0.0	0.5
Y_2	0.0	0.5	0.5
	0.5	0.5	1.0

.

Next, consider the case $p_{111} = p_{122} = p_{212} = p_{221} = \frac{1}{4}$. The conditional distributions are now:

given $D = D_1$:

	X_1	X_2	
Y_1	0.5	0.0	0.5
Y_2	0.0	0.5	0.5
	0.5	0.5	1.0

; given $D = D_2$:

	X_1	X_2	
Y_1	0.0	0.5	0.5
Y_2	0.5	0.0	0.5
	0.5	0.5	1.0

.

Hence $I_D(X, Y) = \log 2$. But $I(X, Y) = 0$ because X and Y are independent in their marginal distribution, so that the dependence effect is minus the value of the previous example. This independence follows directly from $p_{.jk} = \frac{1}{4}$ for each (j, k)

Extension to the three-factor case.—Consider the partial entropy reduction (K.3) and add to it the analogous reductions of Y given X and Z, and of Z given X and Y. The resulting total partial reduction is

$$\sum_r \sum_j \sum_k \sum_l p_{rjkl} \log p^3_{rjkl} p_{..kl} p_{.j.l} p_{.jk.} / p^3_{.jkl} p_{r.kl} p_{rj.l} p_{rjk.} \,, \qquad \text{(L.10)}$$

whereas the entropy reduction due to X, Y, and Z jointly is

$$H(D) - H_{XYZ}(D) = \sum_r \sum_j \sum_k \sum_l p_{rjkl} \log p_{rjkl} / p_{r...} p_{.jkl} \,. \qquad \text{(L.11)}$$

The excess of (L.11) over (L.10) is

$$\Delta_{XYZ}(D) = \sum_j \sum_k \sum_l p_{.jkl} \log p^2_{.jkl} / p_{..kl} p_{.j.l} p_{.jk.} - \sum_r \sum_j \sum_k \sum_l p_{rjkl} \log p_{r...} p^2_{rjkl} / p_{r.kl} p_{rj.l} p_{rjk.} \,. \qquad \text{(L.12)}$$

The first right-hand term in (L.12) can be written as

$$\sum_j \sum_k \sum_l p_{.jkl}(2 \log p_{.jkl} - \log p_{..kl} - \log p_{.j.l} - \log p_{.jk.})$$

$$= 2\sum_j \sum_k \sum_l p_{.jkl} \log p_{.jkl}/p_{.j..}p_{..k.}p_{...l} - \sum_k \sum_l p_{..kl} \log p_{..kl}/p_{..k.}p_{...l}$$

$$- \sum_j \sum_l p_{.j.l} \log p_{.j.l}/p_{.j..}p_{...l} - \sum_j \sum_k p_{.jk.} \log p_{.jk.}/p_{.j..}p_{..k.}\,,$$

which may be abbreviated as

$$2I(X, Y, Z) - I(X, Y) - I(X, Z) - I(Y, Z) \qquad \text{(L.13)}$$

where

$$I(X, Y, Z) = \sum_j \sum_k \sum_l p_{.jkl} \log p_{.jkl}/p_{.j..}p_{..k.}p_{...l} \qquad \text{(L.14)}$$

TABLE A2

DECOMPOSITION OF DEPENDENCE EFFECT FOR DATA OF TABLES 1 AND 2

	TABLE 1 (SOUTHERN CAMP)		TABLE 2 (COMBAT OUTFIT)	
	Marginal	Average Conditional	Marginal	Average Conditional
(X, Y, Z)	0 06839	0 06491	0.06950	0 06209
(X, Y)	0 04792	0.05234	0 02038	0 01814
(X, Z)	0.01265	0 00214	0 02336	0 02106
(Y, Z)	0 00881	0.00693	0 03319	0 02895
(L 13), (L 16)	0 06740	0 06842	0 06206	0 05602
$\Delta_{XYZ}(D)$	−0 00102		0.00605	

NOTE.—For table 1: X = region of origin, Y = race, Z = location of present camp. For Table 2 X = attitude toward racial separation; Y = region of origin; Z = education.

is the expected mutual information of (X, Y, Z). Thus, in the three-factor case we have the linear combination (L.13) which takes the place of $I(X, Y)$ of the two-factor case.

Similarly, the expression which is subtracted in the right-hand side of (L.12) can be written as

$$\sum_r p_{r...}\left[\sum_j \sum_k \sum_l \frac{p_{rjkl}}{p_{r...}} \log \frac{(p_{rjkl}/p_{r...})^2}{(p_{r.kl}/p_{r...})(p_{rj.l}/p_{r...})(p_{rjk.}/p_{r...})}\right]. \qquad \text{(L.15)}$$

After working this out we find that the expression in brackets is of the form of (L.13) when a subscript D_r is added to each I to indicate the conditioning factor. For the conditional expected mutual information of (X, Y, Z) given $D = D_r$ we thus have:

$$I_{D_r}(X, Y, Z) = \sum_j \sum_k \sum_l \frac{p_{rjkl}}{p_{r...}} \log \frac{p_{rjkl}/p_{r...}}{(p_{rj..}/p_{r...})(p_{r.k.}/p_{r...})(p_{r..l}/p_{r...})}\,.$$

The expression in brackets is weighted with the probability $p_{r\ldots}$ in (L.15), so that the dependence effect is equal to (L.13) minus

$$2I_D(X, Y, Z) - I_D(X, Y) - I_D(X, Z) - I_D(Y, Z)\,. \qquad \text{(L.16)}$$

The interpretation of the symbols which occur in this expression will be obvious.

Table A.2 gives the decomposition of the dependence effect for the data of tables 1 and 2. The first four lines contain the expected mutual informations which occur in (L.13) and (L.16). The fourth line contains these two linear combinations, and their last line gives their difference: the dependence effect.

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Commentary and Debate

SOME DEBATE ABOUT ROBERT COOK'S REVIEW OF ETZIONI'S *THE ACTIVE SOCIETY*

I should like to strongly protest the review of Amitai Etzioni's *The Active Society* in the current issue of the *American Journal of Sociology*. It seems to me that a scholarly journal owes to members of the community of scholars the courtesy of having their books reviewed by other scholars. The reviewer of this book uses the occasion for an ideological attack and plainly is actuated by concerns that are far from that of a scholar. I hold no brief for Etzioni's book; in fact, I happen to disagree rather sharply with much of what he has to say, but I am outraged at the shabby treatment he has received in your pages. I think that you owe him a public apology.

LEWIS COSER

State University of New York at Stony Brook

I would like to protest the treatment given Etzioni's book. It was a non-review, written by a person who was not equipped and obviously not prepared to give it a professional and scholarly evaluation. The book is one of the most difficult and demanding in our field. It may become an "important" book. Therefore, I would like to see it get an orthodox review by a trained and experienced sociologist—like the rest of the books you treat. Whether or not the review turns out pro or con is not the point. The book should get a thorough and painstaking review in your *Journal*.

WARREN BREED

Scientific Analysis Corporation, San Francisco

May I come to the defense of Cook's review of my book? Several colleagues wrote to me[1] expressing their dismay over the political and ad hominem attack the alleged review consists of. Of course, I too would have preferred a discussion of the book, rather than the author, and an assessment of its professional merits in addition to a political evaluation. But as a normative position does run throughout the book, and it is a position old guard Marxists, especially Stalinists, would find deeply offensive, there seems little reason why they should not cuss with all their lungs.

The aspect of the "review" I do find perturbing is that it is such a poor *political* commentary. Cook's criteria for radicalisms are the number of times one mentions class conflict, capitalism, and Paul Baran. *The Active Society* challenges the conception that people can be "socialized" and "social

[1] EDITOR'S NOTE: One of those colleagues also wrote to the *Journal* but preferred that his letter be withheld from publication.

controlled"; it outlines the reasons societal roles and patterns must be made responsive to the members—rather than the other way around (chap. 21). It characterizes the United States and the Soviet Union as *un*responsive societies, although for different reasons (chaps. 16–18). The book defines the conditions under which *total transformation* of the societal structure of these and other societies may take place and the kind and scope of citizen mobilization needed to transform them (chap. 15 and second part of chap 21). *The Active Society* concerns itself less with the fundamental transformation of economic and class relations than a Marxist tract and more with those of social and political relations, but the primacy of politics has been endorsed even by Mao.

Finally, the book explores the social conditions the relation between individuals and society will change—in a fundamental and encompassing manner. It is this concern with the societal conditions under which all individuals will find an effective society which is the main basis of the book's "deviationist" nature. The same may be said about the chapters which deal with cybernetics of society, a science now advanced in Poland and the USSR, at grave risk to its advocates.

Cook is quite correct in implying there are strong "liberal" parts to my theory. Those are most evident in the concern with providing all members of society with an equal access to the guidance mechanisms of society and a study of the institutions which protect civil and human rights. Are these parts so offensive that a radical can completely overlook the commitment of the book to a wholistic transformation of our society?

All this is only to say that, *if* sociological books are to be reviewed exclusively on the basis of their normative message, hopefully political commentators will be found who at least will discharge their responsibilities in the terms of the radical posture they seek to advance. The *AJS* did not even provide for such a review of my book.

AMITAI ETZIONI

Columbia University

THE AUTHOR REPLIES

[*Robert M. Cook is a construction worker in New Haven, Connecticut. From 1964 to 1969 he was assistant professor of sociology at Yale University, having received his Ph.D. at Princeton University in 1964. He is co-editor, with Wilbert Moore, of* Readings on Social Change, *published in 1967 by Prentice-Hall. In 1966 and again in 1968, Mr. Cook was the candidate for U.S. Congress of the American Independent Movement in Connecticut.*—EDITOR]

In their hurry to condemn my political views or lack of professionalism, your correspondents missed the main point of my review, namely that

The Active Society (and the school of sociology of which it is a part) is a failure as social thought.

First, I said that this is the kind of book that gives sociology a bad name because it is filled with the pompous italicized elevation of the obvious to "principles."

Second, I said that it is a compendium of footnotes, jargon, and tautologies which will be of little help to those who want to understand how societies work.

Third, I said that the book despite its claim, is marred by philosophical idealism and ignorance of fundamental socioeconomic laws. This leads Etzioni to attribute a state of mind (such as "lack of effectual commitment") to societies, not unlike those who speak of lack of "faith" or "moral fiber." The IWW calls such people "sky pilots."

Fourth, I said that the book virtually ignores social classes, class struggle, and revolution, and falsely asserts that the "postmodern" era arrived in 1945. It is true, as one of your readers claims [EDITOR'S NOTE: In a letter not published], that there is considerable talk about stratification. But "stratification" is one of those terms, so dear to some American sociologists, which obscure rather than illuminate social reality—in this case, the development and existence of social classes.

Finally, I identified Etzioni's political blindness as the source of his intellectual blindness. He does not fail to understand because he is stupid—he fails because he is committed to a set of assumptions which limit his vision. I do not attack his political views because they are different from mine—I attack them because they lead generally to a misunderstanding of social processes and specifically to a gloss over capitalism and the way it works. How little Etzioni can see, even of himself, with these blinders is illustrated by his claim to be interested in the *total transformation* (his italics) of societies while citing, as I said, western European countries governed by social democratic parties as approximations of his ideal.

Some of your readers seem especially concerned with the professional qualifications of your reviewers. I would think that it might make sense to have more reviews by nonacademics to check the field's headlong slide into scholastic irrelevance. After all, we would hardly expect the emperor's tailors to be the ones to tell him he has no clothes.

Etzioni's cries of "old guard Marxist" and "Stalinist" should be funny to anyone who knows me, but otherwise they are sad. Anti-Stalinism won't be as profitable today as it once was for old *Dissent*ers who are now Distinguished Professors of Sociology.

I hope that the letters you received are not representative of your readers' views. I doubt that they are. More and more younger sociologists, at least, are unwilling to fall into the trap of allowing the limits of rational discourse to be set by a self-perpetuating oligarchy of "leaders." The events

of the last ten years have created a group of sociologists who refuse to be apologists for capitalism and imperialism. Their voices will be heard in or out of sociology.

ROBERT M. COOK

COMMENT ON REVIEW OF *BEYOND ECONOMICS* AND *THE TEMPORARY SOCIETY*

I cannot let Lewis A. Dexter's review (*American Journal of Sociology* 75 [September 1969]: 287–88) of Kenneth Boulding's *Beyond Economics. Essays on Society, Religion, and Ethics* and Warren Bennis and Philip Slater's *The Temporary Society* stand without comment.

In reviewing *Beyond Economics,* Dexter sets up a straw man which he then proceeds to demolish. He misses in the book "any systematic theory, or approach to our method of, handling general systems." Yet the author does not claim this as a goal of his writing. Boulding states in the preface that the papers "have been written at many different times and for many different occasions." He calls his essays "errant missiles blasting off from the launching pad of economics in the general direction of a more unified social science." The focus of the book, as I see it, is on where we can go from economics, and is a reflection of Boulding's journey from "fairly pure economist" to "rather impure social philosopher." Surely there is room in the world, even in the academic world, for many paths to truths. Theoretical models are one of these paths, but only one.

Bennis and Slater preface their provocative book with the following

> Prediction is a risky, difficult, and unrewarding activity in any time, and forecasting social trends even more so. To engage in such an endeavor in a world of unprecedented complexity during changes of unparalleled rapidity is as absurd as it is necessary.
>
> This book is an attempt to relate a few dimensions of modern society—democratic systems of social organization, chronic change, socialization, and interpersonal behavior—to place them in some temporal perspective and to try to envision future combinations. [P. ix]

Among other things, the book eloquently argues that democracy is the only system that can successfully cope with the changing demands of contemporary civilization, and sets forth a set of values defining the concept of democracy based both on research and on Bennis's extensive experience in applying social science to help organizations become more humane and effective. Bennis ends his chapter "Beyond Bureaucracy" with a fitting quote from de Tocqueville that captures the spirit of much of the book: " 'I am tempted to believe that what we call necessary institutions are often no more than institutions to which we have grown accus-

tomed. In matters of social constitution, the field of possibilities is much more extensive than men living in their various societies are ready to imagine' " (p. 76). What more important thesis could sociologists tackle to make sociology vital and relevant to "where it's at" today? Bennis suggests we now have the potential "to *seize* the future through the examination and evaluation of the social and moral consequences of change before they invade—like a night train that suddenly appears, out of nowhere" (p. 125).

Is there no place any more in the social sciences for social criticism, informed theorizing, speculation, and predictions not based on simple "more of the same" extrapolations of past events? We would do well not to forget the value of tentative and biased theories, as Bierstedt (1960) so cogently reminded us. I cannot do justice to these excellent books in this short space; I can only urge sociologists not to overlook these two volumes, for there is wisdom and much of value for us in them.

JOHN F. GLASS

San Fernando Valley State College

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THE AUTHOR REPLIES

I am puzzled by Mr. Glass's response to my review of Boulding. I thought I said it was a very worthwhile book—that in the "errant missiles" there is much of value. I lamented the fact that the missiles were not organized in a pattern, not because I have any devotion to social theory (I probably know less about and care less about modern types of social theory than anyone else now living with a Ph.D. in sociology practicing related skills) but for purely rhetorical and pedagogical reasons. Organized ideas are easier to follow than unorganized or semiorganized ones.

I realize very clearly—and thought I made clear—that Professor Boulding has such a fertile imagination that he ought not necessarily to be asked to organize his ideas. I did point out that he has called for "intellectual middlemen" in one of the essays in the book; I said one kind of intellectual middleman is the organizer who does what A. P. Lerner did for the ideas of John Maynard Keynes—helps some of us understand them by organizing them. I indicated some ways in which I thought an intellectual middleman might possibly try to pattern the essays in this book, simply in order (I thought) to help anyone who might care to read them.

If this is an attack on a book, heaven help me! By implication, I said

that Boulding is worthwhile just as Keynes was! I pointed out various specific values of the book. By all means, read it! But since it has not been subjected to an organizing middleman, be prepared for some hard work to elicit general points.

As for the Bennis and Slater book, Mr. Glass attacks me for rejecting social criticism, informed theorizing, speculation, etc. Now, in all frankness, this is nonsense. I think I was indulging in social criticism and suggesting the kind of social criticism which they merit, by concluding my review with an appeal to Sinclair Lewis's ghost. I said if he were living at this time, he would make considerably more mincemeat of Bennis and Slater than he did of (the original of) Elmer Gantry, or words to that effect. Social criticism, to be worthwhile, demands an awareness of historical *comparisons* (social criticism, that is, of the sort that Bennis and Slater attempt)—it demands considerable sensitiveness to ethical problems and dilemmas—and it should involve the capacity to state propositions in such a way that they are not susceptible to extreme exaggeration (I cannot really tell whether Bennis and Slater exaggerate or merely write carelessly). Having written a good many tentative and biased theories myself, I sympathize with Glass's general point but it does not save us from the task of evaluating a particular tentative and biased theory as it is. Within the brief space of a review, I tried to suggest some reasons why these authors give us a particularly frivolous example of such a theory. And in fact I warned the book review editor that I was aware that the panning of a book of this sort is not a conventional response and gave him the option of not publishing my review.[1]

LEWIS DEXTER

Dalhousie University

IMMANUEL WALLERSTEIN REPLIES TO THE REVIEWER OF *UNIVERSITY IN TURMOIL*

For one who accuses authors of blurring crucial distinctions, Alasdair MacIntyre (*American Journal of Sociology* 75, no. 4, pt. 1 [January 1970] 562–64) does not seem to be very good at making them himself.

In *University in Turmoil*, I do not treat universities as "primarily political societies." Rather, insofar as they are an institution with its internal politics of a kind every institution has by definition, I treat of the politics of the institution. Universities are *primarily* centers of research and

[1] The pages of the Book Review section are intended for honest intellectual discourse, and we are pleased when reviewers and correspondents express their own responses, however critical and/or unpopular such views may be.—K. I. R.

education, if by primacy one means some statement of purpose without whose fulfilment the institution could no longer be said to be that kind of institution. They are also, however, other things: they are large economic firms which employ people and purchase land; they are agencies involved in selling services as applied practitioners to governments and others outside the university; they are mechanisms of labor force selection for the larger society; they are residential communities which partially control the social lives of those associated with it. Surely it is not inappropriate for a sociologist to analyze how the university functions in all these latter capacities. Such study no more denigrates the primary functions of the university than an analysis of the social dynamics of a religious cult denigrates a belief in God. That, I should have thought, is a crucial distinction.

Mr. MacIntyre also is unhappy with my defense of increased faculty and student participation in university governance. That is his privilege. But he argues most circuitously when he says that "the relevance of democratic principles [to the governance of a university] has yet to be adequately shown," and to show it would be a "prerequisite to arguing as Wallerstein does." I do however show it in chapter 4. Perhaps MacIntyre does not think my arguments are adequate. But these arguments could scarcely be a "prerequisite" to these same arguments.

I take it MacIntyre is unhappy with what is going on in universities today, and, by a strange displacement he wants to put the onus on those who engage in "false sociological theorizing." No doubt we have all thus sinned, but it is either self-delusion or *hubris* to give us this much credit.

Finally, MacIntyre recounts an anecdote (his favorite?) about G. K. Chesterton. I am unclear what conclusion he wishes us to draw. I want, however, to state that G. K. Chesterton does not represent the civilization I am fighting to defend.

IMMANUEL WALLERSTEIN

Columbia University

THE REVIEWER REPLIES

Mr Wallerstein misses the point of my review, just as his book missed the point of university education. Nothing in his argument connects the political principles he advances with the promotion of those purposes of research and education which alone justify the existence of universities. Moreover, it was not my view that Wallerstein's arguments were inadequate; what I failed to detect was the presence of argument and its replacement by a set of loosely connected assertions.

ALASDAIR MACINTYRE

University of Essex

TREIMAN REPLIES TO GESCHWENDER ON "STATUS DISCREPANCY AND PREJUDICE"

Professor Geschwender (1970), in commenting on my article "Status Discrepancy and Prejudice" (Treiman 1966), has performed the useful function of reopening the question of how best to test the theory of status discrepancy. Unfortunately, his contribution is wholly negative; he provides no genuinely useful alternative to the procedures he criticizes. Accordingly, I would like to take the opportunity to complete his task for him by suggesting an approach which I believe has certain advantages over the one I took in my initial article some five years ago.

Before considering the main issue of how best to investigate status-discrepancy effects, let me quickly dispose of Geschwender's point regarding my choice of income variables. While I used "total family income" purely as an expedient (individual income was not available in my data and is not generally available in survey data), I believe that this measure has both conceptual and practical advantages over that proposed by Geschwender.

Consider the conceptual point first. Even if one expects discrepancy between education and income to have pathological consequences—which is dubious in itself, given the low correlation between education and income (either individual or family) in American society[1]—it is more plausible to posit norms regarding *family* income expected by individuals with given levels of education than to posit norms relating *individual* education and income. The low correlation between education and income effectively precludes the genesis of norms regarding appropriate levels of pay for given levels of educational attainment. But education may determine the life-styles, and attendant consumption patterns, individuals adopt. In American society, families and not individuals are the units of consumption. Hence, discrepancy between education and income may be disruptive, if indeed it is at all, because it implies discrepancy between actual income and the income necessary for the family to attain a level and style of consumption appropriate to the education of the adult members. From the standpoint of any given individual, the issue would then be whether the total family income was adequate to the life-style that individual expected on the basis of his educational attainment.

[1] The correlation between these two variables typically varies between 0.3 and 0.4, depending upon the population studied and the exact definitions of each variable; correlations of this size, of course, indicate that no more than about 15 percent of the variance in income can be attributed to variation in education. Given the large variance in income at each level of educational attainment which the low correlation implies, it is rather difficult to imagine that deviation of actual income from that predicted from education could engender much psychic strain. As I pointed out in the original paper, choice of income and education as variables for study was dictated not by any belief that discrepancy between the two statuses was likely to lead to strain and hence to prejudice but rather by the circumstance that these variables had been utilized by other studies, notably Lenski's (1954), whose methodology I was attempting to criticize.

On the practical side, the advantage of using total family income rather than individual income is that it allows us to retain females in the sample. Own income cannot be used for female respondents since female income is on the average but a small fraction of male income; hence the amount of income "appropriate" to a given level of education would vary widely for men and women. And of course it makes no sense whatsoever to score female respondents with own education and main earner's income. Thus if females are to be included in the sample at all, they must be scored with total family income. It should be noted that while the correlation between total and main earner's income is only moderately high (0.71), the correlations of total and main earner's income with main earner's educational attainment are virtually identical (0.32 and 0.33, respectively). There is thus some reason to believe that comparable results for males would be obtained regardless of which income measure was used. (These three correlations are derived from the data reported in Morgan et al. 1962.)

Moving on to Geschwender's main point, that defining consistent and discrepant cells differently will produce a noticeable "discrepancy effect," let me state that I believe his conclusion to be correct but inconsequential. His procedure for designating cells of the cross-tabulation consistent or discrepant is, indeed, superior to my arbitrary choice of the diagonal cells as consistent. However, contrary to his assertion, use of his definition of consistent and discrepant cells does not change the fundamental conclusion that status discrepancy is of little relevance to level of prejudice once education, income, and region of residence are taken into account.[2] To convince ourselves of this, we can compare the proportion of variance explained by the regression of prointegration scale scores on categories of education, income, and residence (eq. 1 of the original article) with the proportion of variance explained by an equation identical except for the addition of a dummy variable scored 1 for "discrepant" combinations of income and education, and 0 for "consistent" combinations.[3] The original equation accounts for 27.82 percent of the variance in prointegration sentiments, while the second equation accounts for 28.19 percent of the variance, an increment of roughly four-tenths of one percentage point. This is hardly a striking increment, although, due to the large sample size, it is statistically significant at the .05 level (see Cohen 1968, p. 435, for a description of the

[2] Unfortunately Geschwender's table 2 contains two errors which, although they do not affect his analysis, may create some confusion for those trying to understand it. In the body of the table, the number in the second row and third column should read (75) rather than (95), and the number in the seventh row and fourth column should read −0.03 rather than −0.30.

[3] In this and all subsequent analysis reported herein, the same data are used as in the original article: a national stratified area probability sample of adult Americans. As before, we exclude Negroes and all cases with any missing data, leaving 1,169 cases for analysis.

appropriate F test for the significance of an increment in explained variance).

Moreover, Geschwender's procedure suffers from the same defect common to all tabular procedures, the arbitrariness of the choice of cutting points. Suppose, for example, that we designate as discrepant any cells with a percentile difference greater than 0.15 rather than 0.20. In this case, those with some high school and family incomes of less than $5,000 are designated status discrepant, whereas under Geschwender's choice of cutting points this category is status consistent. The average difference between actual and observed prointegration scores is reduced to +0.03 for the consistent cells and −0.03 for the discrepant cells; and the increment in explained variance due to the discrepancy variable is only 0.08 percent, which is not significant at the .05 level.

The ability to change the strength of the conclusion at will by manipulating the definition of consistent and discrepant cells points up the major weakness of my original approach, a weakness which is inherent in cross-tabulation procedures in general. An obvious alternative is to utilize a multiple regression procedure with education, income, and a discrepancy score all defined as intervally scaled variables. This we can do by writing an equation of the form

$$\hat{P} = a + b(N) + c(E) + d(I) + e(D) \, , \qquad (1)$$

where P = the score for an individual on the prointegration sentiments scale; N = 1 for those residing outside the census South, and 0 for those residing in the South; E = years of school completed; I = the natural log of total family income (regarding which, see below); and D is a score measuring the discrepancy between education and income. The obvious question is how to define D.

In light of the argument offered above, it would seem reasonable to define D as the difference between actual family income and family income expected on the basis of respondent's level of education and (for completeness' sake) region of residence. Since the status-discrepancy hypothesis as it is usually phrased and as it was phrased in the original article makes no distinction regarding the direction of discrepancy, the unsigned or absolute value of the difference can be used. That is, define $D = |I - \hat{I}|$, where

$$\hat{I} = a' + b'(N) + c'(E) \, . \qquad (2)$$

The choice of the log form of the income variable is dictated by the fact that the relationship between education and log income is homoscedastic, while the relationship between education and income is not; the variance in income increases as education increases. Because of this, the use of the untransformed income variable would produce substantial positive correlations between the discrepancy score and education and income, respec-

tively, an outcome which is not only unreasonable at face but which would result in an intolerable degree of multicollinearity in the system. The homoscedasticity of the relationship between education and log income renders the correlations between the discrepancy score and education and log income close to zero, which is both conceptually and empirically desirable. Table 1 gives the correlations among the various variables under consideration, including the rejected forms of the income and discrepancy variables.

In order to test the assertion that discrepancy between education and income accounts for variation in acceptance of Negroes (prointegration sentiments) beyond what can be accounted for by the independent effects of education, income, and region, we estimate first the equation

$$\hat{P} = a'' + b''(N) + c''(E) + d''(I) \,, \tag{3}$$

and then equation (1) above. If there is "utility in the status discrepancy concept in explaining levels of prejudice," as Geschwender claims, it should appear in the form of an increment in the amount of variance explained when the discrepancy term is added to the regression equation. Estimation of equations (3) and (1) yields the following, with coefficients expressed in standard form:

$$\hat{P} = .39(N) + .28(E) + .07(I) \,; \qquad R^2 = .2848 \,.$$

$$\hat{P} = .39(N) + .28(E) + .07(I) - .06(D) \,; \qquad R^2 = .2881 \,.$$

It is evident from comparison of the R^2s associated with the two equations that the increment in explained variance due to the introduction of the discrepancy variable is extremely small, approximately one-third of a percentage point (although due to the large sample size, the increment is statistically significant at the .05 level). Hence, we are justified in omitting the discrepancy variable as a predictor of prejudice on grounds of parsimony alone. Indeed, examining the two equations, it is clear that neither income per se nor discrepancy between actual and expected income accounts for much of the variation in prejudice net of education and region of residence, although all coefficients in the two equations are statistically significant and the coefficients of both income and the discrepancy score have the predicted sign. Thus, both these variables might well be discarded. Doing so, we account for nearly as much of the variation in prejudice as before: $R^2_{P(NE)} = .2816$.

Turning now to Geschwender's claim that prejudice is greater than would be expected from "general status" for those whose "education levels" exceed their "income levels" and less than expected for those whose "income levels" exceed their "education levels," we can provide a test comparable

TABLE 1

MEANS, STANDARD DEVIATIONS, AND INTERCORRELATIONS AMONG SELECTED VARIABLES RELEVANT TO THE ANALYSIS OF THE RELATION BETWEEN STATUS DISCREPANCY AND PREJUDICE

VARIABLE	INTERCORRELATIONS									MEAN	S.D.
	P	N	E	I	D	D'	I_R	D_R	D'_R		
P = Prointegration scale score	1 000	0 431	0 354	0 238	−0.121	−0 060	0.182	0 024	−0 034	4 32	2.54
N = 1 for non-Southern residence		1 000	0.107	0 109	−0 094	0.000	0 065	−0.048	0.000	0.718	0.450
E = years of school completed	.		1.000	0 456	−0 088	0 000	0 402	0 212	0 000	10.6	3.48
I = Log$_e$ total family income	..	.		1.000	−0 038	−0.888	0 905	0.344	−0.787	8.65	0.632
$D = \|I-\hat{I}\|$, $\hat{I}$ estimated by eq. (2)	.	..		.	1 000	−0 008	0.262	0.779	−0.327	0.443	0.345
$D' = (I-\hat{I})$	.	.	.	.	.	1.000	−0.812	−0.284	0.887	0.000	0.561
I_R = Total family income		.	.	.	.	...	1.000	0 652	−0.916	6954.00	4,758
$D_R = \|I_R-\hat{I}_R\|$	.		..	.		...	..	1.000	−0.621	3019.00	3,139
$D'_R = (I_R-\hat{I}_R)$	.	..	...	..	.	.	.	...	1.000	0.569*	4,356

* Departs from zero due to rounding error.

to the one above.[4] The hypothesis that prejudice is negatively associated with the extent to which actual income exceeds income expected from education has a certain intuitive appeal, more so than the hypothesis that *any* misalignment of income and education should lead to increased prejudice. If one accepts the argument that prejudice has its genesis, in part at least, in a sense of frustration and resentment and the need to find a scapegoat for it, and the corresponding argument that having less money than is appropriate to one's status is a source of frustration while having more money than expected is a source of gratification, the prediction of a positive association between the prointegration score and the signed difference score, $D' = (I - \hat{I})$ follows immediately. The reader will recognize this as the part correlation $r_{P(I \cdot NE)}$; that is, $r_{P(I - \hat{I})} = r_{P(I \cdot NE)}$ (Bohrnstedt 1969, p. 118). It can be shown that $(I - \hat{I})$ is uncorrelated with N and E; hence, the square of the part correlation $r_{P(I \cdot NE)}$ represents the *increment* in explained variance in P over that due to level of education and region of residence alone. In our data, this quantity is virtually zero, since $r_{P(I \cdot NE)} = -.06$, which in fact is of sign opposite that expected under the hypothesis. We are therefore able to reject completely the suggestion that the extent to which actual income exceeds or falls short of the income appropriate to a given level of education is in any way associated with attitudes toward Negroes. At least in our data, income frustration does not lead to heightened prejudice, contrary to Geschwender's assertion.

Summary.—Using procedures which allow a direct assessment of the increment in explanatory power associated with the introduction of a status-discrepancy dimension into a model of the determinants of anti-Negro prejudice, we conclude that the status-discrepancy factor adds little or nothing to the explanation. We suggest that our procedure has general utility in the study of the effects of status discrepancy on behavior.

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[4] The obvious difficulty with Geschwender's procedure for assessing this claim (apart from the fact that it provides no quantitative assessment of the importance of adding additional variables such as the discrepancy score to the model, a shortcoming common to all of what Geschwender has suggested in his commentary) is that by converting scores to ranks information is thrown away, and, in particular, no account is taken of the size of differences between cells in the value of the dependent variable; thus, small variations in the cell means due to sampling variability can make a substantial (and misleading) difference in the result.

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Book Reviews

Criteria for Scientific Development: Public Policy and National Goals. Edited by Edward Shils. Cambridge, Mass.: M.I.T. Press, 1968. Pp. xvi+207. $2.95.

Reflections on Big Science. By Alvin M. Weinberg. Cambridge, Mass.: M.I.T. Press, 1967. Pp. ix+182. $1.95.

The Uneasy Partnership: Social Science and the Federal Government in the Twentieth Century. By Gene M. Lyons. New York: Russell Sage Foundation, 1969. Pp. xvi+394. $8.50.

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During the last twenty-five years, the reciprocal effects between science, on the one hand, and all the other parts of society and particularly government, on the other, have become *more evident, more consequential for social change and social policy, and more of a "social problem" involving disputed value choices.* In response, there has emerged the embryonic social science discipline now often called "science policy studies." There exists as yet no systematic description of this field, but among the important categories of political, sociological, economic, and psychological problems it considers are the following: (1) criteria for the societal allocation of money, men, and resources to science as against other types of social activities; (2) criteria for the allocation of money, men, and resources among the different branches of science (e.g., chemistry, biology, or social science) and the different types of science (e.g., pure, applied, or developmental); (3) the effective forms of social control and government within science; (4) the alternative and effective arrangements for leadership and organization of work in science; (5) the alternative and effective forms of recruitment, socialization, communication, reward, and prestige structures in science; and (6) the proper relations between scientific advice and governmental decision.

It is obvious from this list that science policy studies have to be multidisciplinary. Among the professional social scientists who have done work in the field are Don Price, Bruce Smith, and Robert Gilpin from political science; William Garvey and Belver Griffith from psychology; Harry G. Johnson, C. F. Carter, and B. R. Williams from economics; and Robert Merton, Warren Hagstrom, Steven and Jonathon Cole, Herbert Menzel, and Edward Shils from sociology. But the field has also attracted "gifted amateurs," especially from natural scientists but also from among journalists. Among the scientist-sages are Alvin Weinberg, director of the Oak Ridge National Laboratory and Harvey Brooks, dean of the Division of Engineering and Applied Physics at Harvard and member of the President's Science Advisory Committee. The most interesting of the journalists by far is Daniel Greenberg of *Science.*

One place where the gifted amateur and some of the professional social

scientists (chiefly the economists) meet in useful and cumulative discussion is in the journal *Minerva*, founded in 1962 by Edward Shils and edited by him since then with such distinction that it has become the leading journal in the field. In the first book under review, Shils has now made a selection of articles from *Minerva* and published them for a wider audience. They bear on two themes: mainly, that of the criteria of the allocation of money, men, and resources between science and other social activities and also within the special branches and types of science; and, in lesser measure, that of science policy for the underdeveloped countries. On the theme of allocation, three articles by Alvin Weinberg stimulated interesting responses from the philosopher, Stephen Toulmin (two articles), and from two economists, C. F. Carter and B. R. Williams. The economists try hard, as economists will, to reduce all problems of choice to rational grounds, but Weinberg and Toulmin are finally in agreement that allocative problems in society involve fundamental value choices for which there is no simple rational calculus. Shils, in his excellent introduction providing a setting and summary of the volume, concurs with Weinberg and Toulmin, but argues the necessity of introducing as much rationality as possible into science policy discussions. In sum, though several powerful intellects are displayed in these essays, and though they raise fundamental issues, there is nothing of great political or sociological novelty in the answers that are given.

The second book under review, Alvin Weinberg's *Reflections on Big Science*, is a collection of his essays printed over the last fifteen years while he has been director of Oak Ridge and a leading statesman in the scientific community. Part 1, "The Promise of Scientific Technology: The New Revolutions," discusses the great changes occurring in thermodynamic as well as nuclear energy technology, suggests some of the science policy choices which accordingly confront us, and gives useful guides to what sensible choices might be. In this essay, foreshadowing our present concern (a little too much?) for ecology and the exploited environment, he speaks of "tainted revolutions" and the "insults" energy revolutions give to some parts of our environment. Part 2, "The Problems of Big Science: Scientific Communication," points to important problems much discussed these last twenty years, but it is not so illuminating as the systematic and empirical work on scientific communication done recently by Garvey and Griffith, Diana Crane, Steven Cole, or Herbert Menzel. Part 3, "The Choices of Big Science," contains the three essays from *Minerva* reprinted in the Shils volume and one more. Finally, part 4, "The Institutions of Big Science," very usefully opens up the discussion of the relations and overlapping functions of the universities and the large national scientific laboratories such as Oak Ridge or Brookhaven. Weinberg is an excellent advocate of the case for the national laboratories as the most effective means of using multidisciplinary science groups for broad science policy missions. All in all, among the scientist-sages no one excels Weinberg for foresight, hard thinking, and decisiveness. But these, as I shall say later, are only the beginning; they are no substitute for systematic concepts and theories and for rigorous empirical investigation.

The third book under review, Gene Lyons's *The Uneasy Partnership*, an account of the place of social science in the federal government in the twentieth century, is an example of a genus in science policy activities. Many of the different branches or types of science, in order to justify their own claims to a larger share in the allocation of men, money, and resources as between science and other social activities or among the several branches of science itself, have appointed official committees to prepare justifications for such a larger share. For example, in 1964, the Committee on Science and Public Policy of the National Academy of Sciences published *Federal Support of Basic Research in Institutions of Higher Learning*, a claim for more national resources for pure science. In 1965, the Division of Chemistry and Chemical Technology of the National Academy published *Chemistry: Opportunities and Needs*, chemistry's claim to a larger share of the national resources. And, lastly, in 1968, the Advisory Committee on Government Programs in the Behavioral Sciences of the National Academy published *The Behavioral Sciences and the Federal Government*. As the executive secretary of this committee, Lyons prepared the materials for a historical as well as current perspective on the committee's work. Fortunately, these materials and the claims they justify have been put together as a separate book. It provides a good history of the development and problems of the social sciences in general and in the federal government in particular. Lyons has not only canvassed the available printed sources but has dipped into the archives; indeed, he sharpens our appetite for more. It is clear that we could use and enjoy more first-rate "current history" of social science than we now have.

Although they are all valuable in their own ways, all three of the books under review have left me wishing for something different or something more. I feel especially strongly about the shortcomings of the first two. As an applied and multidisciplinary field, science policy studies need to keep close contact with the fundamental social science disciplines, with their best theories and their best research methods and findings. The Shils and Weinberg books do not give enough attention to the excellent theoretical and empirical work by such political scientists as Price, Smith, and Gilpin or such sociologists as Merton, Hagstrom, or the Coles. In all science, it is theory, method, and research that make the man. Gifted amateurism is no longer enough for science policy studies.

The Rules of the Game in Paris. By Nathan Leites. Translated by Derek Coltman, with a foreword by Raymond Aron. Chicago: University of Chicago Press, 1969. Pp. x+355. $12.00.

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1. The Game, in this case, is life. In Paris, people play it in a special way. Nathan Leites has long played the Parisian game, and long watched others

playing it. Now he has tried to convey the experience without destroying its delicacy or its tension. "My purpose: to achieve an evocation of the nuances in a certain climate. This requires in the first place that I express every detail I believe I have observed, as well as its relation to the other aspects of the whole, in my own words. This I have tried to do. But it also requires that I link with my own formulations some of the expressions that my subjects themselves might employ, or in which they are recognizable. To resort to paraphrase, merely in order that everything can be brought through more rapidly and more conveniently, would seem to me to be showing a lack of fidelity to the object. It seems to me rather undesirable that I should interpose myself to such a degree between the reader and what I wish to show him" (Leites, p. 5).

2. The account of the game therefore proceeds through numbered thoughts which group into chapters, which in their turn group into books Each thought expresses one facet of the Parisian outlook. Each one explodes from Leites's terse announcement of the theme into a firework shower of cogent quotations, illustrations or qualifications. Montaigne is a frequent source, and a general model. "Some readers will say that I merely set out numbers of characteristics one after the other without indicating how they combine to make a whole. But in what could that consist other than in the relationships that link those characteristics?" (Leites, p. 3).

3. Life and this book organize around four antitheses: routine versus adventure, unreason versus wisdom, conciliation versus repression, light versus shade. Little by little we learn that in each regard the Parisian outlook is, in Raymond Aron's phrase, steadfast and changing. The Parisian sees and cherishes the coexistence of opposites; he glides among irony, ambivalence, and synthesis.

4. The Parisians whose views matter form a small world; they are elites, articulate men, often literati. "The more empty a mind is, and the less subject to counterpoise, the more easily will it sink under the weight of the first impression. That is why children, the common people, women and the sick, are the most liable to be led by the ears" (Montaigne, *Essays*).

5. No sense asking whether this method is valid. That would be like asking whether the shimmer on the sunlit Seine validly represents the river "The world is but a school of research. The question is not who shall hit the ring, but who shall run the best course. He can be as great a fool who speaks true, as he who speaks false; for we are concerned with the manner, not the matter, of speaking. It is my nature to regard the form as much as the substance, the advocate as much as the cause, as Alcibiades ordained that we should" (Montaigne, *Essays*).

6. Yet it does lead to a view of social life as an expression of nature, and of social research as an inquiry into that underlying nature. In the National Assembly's debate over the separation of church and state, a Catholic deputy challenged Aristide Briand's allusion to different kinds of law: "For the law, in your view and mine—I am happy to note, Monsieur le Ministre, that we agree on this—can only be considered as the whole set of relationships which grow from the very nature of things, as our illustrious com-

patriot Montesquieu said long before me [*smiles*]. Someone quoted Mirabeau; surely I have the right to quote Montesquieu" (*Journal Official*, November 20, 1907).

7. We can therefore take the book as a magic potion: drink well; it both clears and fills the mind. But Leites would take little pleasure from our jelling it and chopping it into analytic cubes. "It may be said, with some appearance of truth, that there is an ABC ignorance that preceded knowledge, and another, a doctoral ignorance that comes after it: an ignorance that knowledge creates and engenders, just as it uncreates and destroys the former" (Montaigne, *Essays*). Leites's medium is his message.

8. The translation by Derek Coltman is superb.

9. The price of $12.00 is, on the other hand, outrageous. "From 1913 on," Mme Singer-Kérel tells us, "changes in the cost of living have been dominated by inflationary phenomena" (*Le coût de la vie à Paris de 1840 à 1954*, p. 135).

Politics and the Social Sciences. Edited by Seymour Martin Lipset. New York: Oxford University Press, 1969. Pp. xxii+328. $7.50.

Richard P. Taub

University of Chicago

Even when book titles provide little information about their contents, this book is an egregious standout. For it is not about the exciting questions concerning the relationship of social scientists to the political system in their roles as advisers, recipients of support, or citizens. Instead it is about the relationship of the academic discipline, political science, to its sister (fellow?) social sciences; thus we see chapter titles as "Anthropology and Political Science" and "Sociology and Political Science."

Arnold Rogow, writing on psychiatry, suggests that political scientists have rejected such valuable concepts as national character and authoritarianism only because they were insufficiently hard, and their users consequently fell under the censure of political science scientism. He writes as if the hundreds of papers on each of these concepts had little to do with the deficiencies of the concepts themselves.

In a chapter entitled "From the Sociology of Politics to Political Sociology," Giovanni Sartori attacks what he calls the "sociology of politics" ("bad"): its practitioners use simplistic explanations, for example, Alford and early Lipset, who emphasize the class nature of parties more than is desirable. Sociology of politics contrasts with political sociology ("good"): practitioners of this art use more subtle and complex explanations to discuss parties, for example, Lipset and Rokkan, who suggest that parties can be the expression of cleavages which are not *necessarily* class based. It is difficult to see what the fuss is about.

Richard Jensen contributes two chapters, one on history and the political scientist, and one which is a history of survey research. Professor

Jensen's writing abounds in "legitimacy crises," "identity crises," "paradigms," and the like, concepts which, by excessive use outside the contexts in which they were created, tend to develop blunted meanings. In his history chapter, he reports: "The behavioral revolution completely swept political science in 1924" (p. 9). It is difficult to ascertain precisely what this revolution might mean to a discipline whose members have quarreled over the role of behaviorism ever since; to a discipline, some of whose major departments have had none or one behaviorist during much of this period and whose journal articles have only recently heavily emphasized behavior. Jensen's chapter on the history of survey research contains long lists of names of people who have worked with either aggregate or survey data, but the author seems unable to report exactly what these people did and what impact their work had on the thought of other political scientists. A more analytic approach which explored the different traditions in which such important centers as the Survey Research Center and the Bureau of Applied Social Research conduct their business would have added to the discussion. Similarly, a discussion of the curious relationship of the various political polling organizations to academic political science would have made the paper more meaningful.

Scott Greer provides a rather general and idiosyncratic overview of the disciplines of sociology and political science. Mancur Olson, in assessing the relationship of economics to sociology, decides to let the work of Talcott Parsons stand for sociology, and a one-sided view of Talcott Parsons stand for Talcott Parsons. He demonstrates how economics could provide a more complex and balanced picture.

Hayward Alker, Jr., contributes the longest chapter of the book, "Statistics and Politics: The Need for Causal Data Analysis," which I gather is a somewhat dated, systematic review of most methods used in sociology. Unfortunately, his discussion of the uses of regression techniques does not even bring the reader to Duncan's already classic 1966 paper on path analysis His treatment of stepwise regression seems misplaced in this section, for it is entirely post hoc and atheoretical. Most unfortunate is Alker's use of the term "causal." Hardly any of these techniques either require or yield cause-and-effect relationships. It would have been more desirable to suppress the cause-and-effect paradigm or to spend a few pages clarifying its frequent use.

Another list of techniques of a different sort is provided by William Mitchell. He explores the way economic exchange models of process might be useful for the political scientist.

Fred Greenstein and Ronald Cohen contribute the two best papers in the book. Greenstein's contribution on "Politics and Personality" would stand out even against a more luminous background. He not only analyzes the different ways in which personality has been discussed in relationship to politics, but he comes to grips in a serious way with the issue of the utility of individual explanations as compared with institutional ones, and he provides a sophisticated discussion of how to balance the two components Ronald Cohen soberly explores the relationship of the village study of the

anthropologist to the "nation study" of the political scientists who emphasize political processes at what might be called the macrolevel.

In his introduction to the book, Seymour Martin Lipset explains among other things that economists and psychologists are interested in different aspects of behavior. "The psychologist is interested in learning why individuals vary in their behavior" (p. viii). While not all of Lipset's contribution is at this level, it is seldom much higher.

A reviewer should suggest who might benefit by a particular publication. In the present instance, that is no easy task. With some luck, the Oxford University Press will have a tax loss. The authors will have "publications." Perhaps it is too much to ask for more.

Sociology Tomorrow: An Evaluation of Sociological Theories in Terms of Science. By Peter Park. New York: Pegasus, 1969. Pp. 176. $1.95 (paper).

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Perhaps it is unfair to subject unfootnoted books written "for the benefit of the general reading public" to the sometimes overly rigorous criteria generally reserved for our colleagues. Persons who attempt the translation of some of the more peculiar and arcane jingoism of the social sciences into intelligible prose for the purposes of de-mystifying Ivory Tower thought for the lay public certainly render a valuable and much-needed service, and Professor Park's *Sociology Tomorrow* is to be commended on those grounds alone.

This well-written work is composed of three general sections and a concluding epilogue. The first section addresses itself to several of the crucial questions in the philosophy of science which continue to plague the social sciences; it contains a brief explication of scientific understanding, the problems involved in constructing theories of social phenomena, the thorny problems of prediction and utility, and a concluding chapter detailing the numerous ways sociological theories are grounded in common sense understandings of the social world. Park concludes this section with his evaluation of sociological theories as being in a "pre-scientific" state, generally comparable with the theories of Copernicus, Aristotle, and Galileo before the scientific revolutions of the subsequent centuries.

The second section of the book is a critical evaluation of three types of sociological theories: the interpretative theories of the Weberian tradition in sociology which, according to Park, "must be regarded as an obstacle to scientific sociology"; the tautological functionalist theories as exemplified by Davis and Moore grounded in "intuitive understanding inherited from common sense" which has "short-circuited tight reasoning and observation and has prevented empirical verification, or falsification, of functional explanation"; the formal theories à la Homans which have emphasized the postulational and deductive structure of a sociological explanation which

are viewed as welcomed developments in sociology according to Park, but which also suffer from the intuitive commonsense understanding and "could merely promote a pseudo-science unless they are accompanied by other, more essential activities that make up science." The author's perceptive critique of the shortcomings of these three types of sociological theory is thoughtful and stimulating, and this portion of the book alone justifies the tariff.

The third section details many of the complex problems of measurement and quantification in sociology, and the dangers of inference from empirical data grounded in questionable conceptual thinking. The epilogue of the book contains Park's general conclusions regarding "the state of the art," and a call to arms for a conceptual revolution in sociology which would begin "in discovering empirical laws that are germane, valid, and general," and a concluding prescription that value-freedom is the best policy after all, that "injecting nonscientific values into sociology is bound to be self-defeating."

Park's critique of sociological theories "in terms of science" is grounded in the analogy between the natural and physical sciences and the social sciences. The conception of "science" he evaluates these theories "in terms of" represents the positivistic dream of ultimately achieving absolute knowledge of social phenomena independent of the subjective commonsense perceptions of those phenomena by the social actors. The comparison of contemporary sociology to the "pre-scientific" stages of development in the physical sciences, such as the Aristotelian cosmology, the physics of Newton, or to the astronomy of Galileo when he was doing his thing, is indeed attractive and seductive for those of us who remain in awe of the social world, and, while it even appears to make sense on a commonsense level of understanding, this analogy obscures the peculiar epistemological problems introduced by the reflectivity and indexicality of human activity which always seem to subvert our scientific understandings of the social world. To call contemporary sociological theories "pre-scientific" because they do not appear to provide the types of knowledge we feel we *need* for effectively dealing with the problematic exigencies of our complex world, as contrasted with the physical sciences which often appear to be providing knowledge for dealing with the physical world more rapidly than some of us would desire, overlooks the peculiar problem faced by social scientists in their attempts to construct theories of "molecules" which have a subjectivity of their own, "molecules" which create their own sociological theories in order to effectively deal with the practical exigencies of their existence. Park obliquely acknowledges many of these problems through his perceptive critique of the commonsense foundations of several macro- and micro-theories in contemporary sociology, but the complete contempt he repeatedly expresses for the commonsense understanding and the commonsense theory is reminiscent of the disdain accorded the member understanding by Saint-Simon, Comte, Durkheim, and more recent theorists preoccupied with justifying sociology as an enterprise comparable in its utility with that of physics or mathematics, that is, a "real science." Park's call to arms for a

conceptual revolution in sociology, his contemptuous and a priori exclusion of the common sense as "un-scientific," and his uncritical acceptance of the hypothetical deductive reasoning of the positivist's methodological logic, virtually precludes the necessity for taking the everyday lives of our "molecules," and their commonsense explanations of that existence as the fundamental datum for any social theory which aims for an understanding of the social world as a meaningful one for the "molecules" which inhabit it.

Sociology Tomorrow is highly recommended for the layman, the "general reading public," and it will acquaint many nonsocial scientists with many of the complex problems we face in our attempts to understand ourselves. The absolutist conception of science utilized throughout this book, however, is *Sociology Yesterday*, and it is suggested that this is a more appropriate title for Park's critique.

Interaction Ritual: Essays on Face-to-Face Behavior. By Erving Goffman. Chicago: Aldine Publishing Co., 1967. Pp. 270. $5.75.

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This book makes available for review and criticism by sociologists a collected set of papers written (with one exception) in the mid-fifties and published (with one exception) in nonsociological journals. The author's manifest intention (pp. 2 and 3) is to present a model of man as a social interactant in shifting gatherings.

The first paper, "On Face Work," exemplifies the author's style. The term "face," which is usually jokingly used as a stereotype about the status concerns of inscrutable Orientals, is taken from this context and defined as "the positive social value a person claims for himself by the *line* he presents in social encounters." This beginning is the base for a set of definitions through which everyday words are related to one another, not as in a system, but as in an ever-differentiating tree of specifications. For example, the motivation to carry out the actions to protect or defend threats to one's face is "pride"; when face work is done because of duty to a wider social unit, the motivation is "honor"; and when the response compunctions have to do with postural or expressive events, one speaks of "dignity." "Tact," "savoir faire," and "diplomacy" are social skills prescriptively or proscriptively mobilized by a consideration of face. "Discretion" is leaving unstated facts that might contradict the positive claims of others. The combined tendency to use "snubs" (points relating to class) and "digs" (points relating to moral responsibility) is "bitchiness."

In both the early and later papers in this collection, similar "naming" is prominent. A reader finds it difficult to decide whether this naming is meant to be taken as a serious scientific enterprise. If it is, it should not be. One cannot establish the validity of elements of his theory by showing that there is a word with a similar connotation in everyday language.

More seriously, the sequence of acts initiated by a threat and terminated by the reestablishment of ritual equilibrium is designated by the author as an interchange. Such interchanges, the author suggests, provide natural empirical units for studying interactions of all kinds. Unfortunately, the only operational guide offered for such study is the observation that pauses between interchanges are longer than pauses within them, and this only when the same speaker has not terminated one and begun the next interchange (p. 37). Interchanges ideally go through phases of challenge, offering, acceptance, and thanks. The ideal pattern is not necessarily a prediction, for when these phases are not clearly present, the author suggests that certain "classic" alternative moves have probably been taken. For example, the challenged person can elect not to "give in" (i.e., make an offering); he might just withdraw in a righteous huff, etc. Unfortunately, the author gives no guidance as to when the cost of the aggressive response will be "faced" instead of being blunted by rituals.

To simply specify paths of potential action, without saying more about how the paths will be selected, violates contemporary behavioral science expectations. On one hand, this is audacious; on the other, this is a defect in scholarship.

In the same vein, in the introduction, in new footnotes, or in the more recent essays, the author should take account of post-1955 empirical studies of sociability interaction. Riesman, Watson, and Potter report that assistant professors stress different themes at faculty cocktail parties than do professors. It is persuasive to see interactants at shifting gatherings as not cut off from current stress (nor past memories), but rather as vulnerable to producing themes of fantasy which are responded to by others so that psychodramatic episodes unrelated to face are set in motion. Goffman's model is inadequate for this.

At places (p. 25), the author writes as if he were using "exchange theory," but in his distinction between ritual order and social order, it becomes clear that he is a fundamental critic of the rationalistic premises of exchange theory. He suggests that there is a schoolboy conception of the world as a place in which those who work hard are rewarded and those who cut corners are caught and punished. But the ritual order is different, for in the social order society and the individual play an easier game. Through half-truths, rationalizations, and the tactful support of an intimate circle, one can be what he wants to be and forego doing what others have done to advance. One can construct an ordered social life by staying away from topics and times when he is not wanted, he can cooperate with others to save face by not raising questions. One learns that there is much to be gained by venturing nothing. Goffman's protagonist lives outside the constraints of what for Homans would be an internal system. Goffman's position could constitute a profound addition to the perspectives of Homans, Blau, and Gouldner, but for this to occur he must confront the writings of others in such a way that similarities and differences can be evaluated. He cites, but only illustratively.

In the present volume, the essay "Where the Action Is" treats gambling,

race-car driving, boxing, and the like from the standpoint of the rate at which threats to one's well being arise, or, more accurately, are sought. This brings to the mind of the reader the thought that the capacity of "total institutions" to disable (as pointed out in Goffman's earlier essays) arises expressly from the degree to which one's opportunity to earn undeserved status by face work or risk taking is restricted. While new facets of this type do emerge when an active reader juxtaposes the author's essays, the author himself is quite inadequate at synthesis. The essays have beginnings and middles, but no ends; they overlap and leave bare areas.

The author's "action" essay leaves this reader in doubt concerning the clarity with which the symbiotic relation between the vicarious world of exemplary fatefulness and the mundane world of social organization is understood. Would it not be even better if the functional significance of the gambler's losing to the nongambler were made clear? The need to risk one's face is not uniform in all strata; the Russian circus is by no means as thrilling as the American one. Even though the author cites Peristiany's *Honour and Shame* approvingly, he makes no generalizations as to the way status and culture combined to create a typology of which action will be sought.

The delineation of a possible relationship is just a first step in social research. As one moves from specifications of types to establishing parameters of incidence, one operates so that reconceptualizations can be coerced by stubborn facts. The author is justifiably admired for going it alone in terms of style and sense of problem, but he stops short of being potentially disconfirmed by stubborn facts. In this sense, he has defended his *line* too well.

Innovation in Mass Education. Edited by David Street. New York: John Wiley & Sons, 1969. Pp. 342. $9.95.

Eleanor P. Wolf

Wayne State University

This book will win scant praise from those radical critics of education who view the urban school crisis as an apocalyptic struggle between good (slum children and their parents) and evil (educational power structure). The authors have not abandoned sociological analysis for moralistic exhortation. Although the book's focus on the need for innovation makes it sharply critical of the status quo, no Utopias are projected which would require enormous numbers of greatly gifted, self-sacrificing teachers and superadministrators at every level from superintendent to principal. In short, the tone is nonpolemical and the innovations are within the bounds of hopeful possibility.

In his introductory chapter, David Street offers a valuable exposition of the key areas for research in the "macrosociology of educational change." In it he warns against the "cult of pessimism" induced by reflection upon data collected by James Coleman (and others) which document the over-

powering impact of social background upon school achievement. Yet the research findings presented in this volume can hardly be said to dispel the gloom. Roberta Ash (a discerning participant-observer) contributes a provocative study of an educational experiment with core-city high school boys, described by Street as showing the "substantial potentialities as well as the limits of organizational reform." But consider: Twenty-nine boys ("high potential under-achievers") were selected by their teachers from the top three of five tracks. Their enrollment in the project was voluntary. The students, divided into four groups, were exposed to a rich and varied educational program for eight weeks, six hours a day, using four teachers (selected for their superior skills) and eight undergraduates serving as aides Despite some interesting results (most striking was the college students' changed assessment, Ash says, of the positive qualities in "lower-class Negro culture") only one of the twenty-nine participants attained better than a D average the following year. Too little? Too late? Wrong content? We do not know.

Mary Queeley summarizes her carefully designed investigation of the effects of nongraded primary school organization: "The findings on the pupils do not provide a consistent picture that would indicate a superiority or lack of it for the nongraded format" (p. 81). Despite relatively slight gains in achievement, however, an innovation which is not costly, doesn't arouse bitter opposition, and has other positive side effects deserves further trials, which are in fact, quite numerous.

A study of the impact of frequent school transfers seems to indicate that they intensify learning problems; the authors (Thomas Smith, C. T. Husbands, and David Street) suggest modification in transfer policy and a more sensitive response to the newcomer, but there is no claim that such innovation would greatly alter the dismal relationship between social disadvantage and school performance.

How crucial is the location of controlling power? Martin Mayer's famous account of the experience of a local school-board member trying to find room for some degree of maneuver and flexibility within the constraints of the New York City system is followed by an analysis (Edward Parelius) of local control in a small, mainly black village-into-suburban community in the Midwest. In both cases children from poor families were performing much below grade level. While Mayer chronicles the bureaucratic barriers to even modest innovation or adaptation, Parelius describes the obstacles of reform which arose from local resistance to professionalism, universalistic norms, and departure from authoritarian tradition.

Can teacher's colleges develop more able young recruits willing to take jobs in difficult schools? Bryan Roberts's interesting study of trainees in three different programs (one specifically designed to achieve this goal) showed their growing reluctance to accept such jobs, a consequence, apparently, of successful exposure to academic values.

As a prologue to the proposals in his important paper, "Institution Building in Urban Education," Morris Janowitz offers an analysis which, while characteristically tough minded, reveals concern and sympathy for

all the struggling groups involved in the core-city educational crisis. After considering both the contributions and limitations of the "mental health model" (schools take responsibility for total life of the child) and the compromise early education model (strategic intervention to compensate for social deficits in intellectual development), he proceeds to a consideration of organizational change strategies. Such efforts may proceed along the lines of a specialization model, which deriving from cognition theory, emphasizes curriculum reform, or (his preference) an aggregation model which is explicitly designed to meet the needs of the slum school "which has lost its organizational legitimacy and has a normative order with powerful elements of opposition to the larger society" (p. 305). The basic strategy must be to devise educational practices at best, to transform this order; at least, to neutralize opposition sufficiently to permit effective operation. With this orientation, Janowitz sights the key target group as Negro slum boys, fourteen to eighteen years old. The remaining thirty pages specify the operational elements required. A crucial one is the institutionalization of a variety of practices which constitute a new role of teacher-manager in slum schools. The success of the aggregation model, however, would require extensive and continuing federal subsidies, not only for its varied educational aspects but for an array of employment and family support programs designed to achieve group mobility. For this, a majority in the United States must be willing "to modify its position of privilege." Thus Janowitz acknowledges explicitly what is present only by implication elsewhere in this volume.

Innovation in Mass Education, like most other works in this field, suffers from insufficient attention to the perspectives of the typical (*not* the extraordinary) teacher and administrator. Although the excellent study (by Rosemary C. Sarri and Rober D. Vinter) on the impact of a group-work program upon "malperforming" students is one which does include these perspectives, it nevertheless illustrates what I mean. The group-work experience was found to have rather limited impact on behavior and almost none on achievement; the authors conclude that changes in social organization and program are a necessity. A major obstacle to such change, they suggest, is the prevailing assessment of these pupils by their teachers, who found it hard to accept the study's findings of "high levels of commitment and aspiration on the part of malperforming students." When one considers that these same students, however, also reported (pp. 106–7) that they were often truant, tardy, engaged in fighting, misbehaved in class, did not do assignments, did not "try as hard as others," did not seek help with schoolwork from teachers or friends, etc., this skepticism would seem reasonable. After having frequently observed these behaviors, teachers and administrators were informed by a research team that the troublesome ones are as committed to education and as interested in school as others. Scholars have varying explanations for these instances of word-deed discrepancy, common, for example, in race relations where some who practice discrimination insist they are free of prejudice. Verbal formulations have important meaning and cannot be dismissed by the label of lip service, but

participants (malperformers and teachers alike) tend to respond to the behavior they see, rather than the attitudes reported to them.

Generally, one would have expected sociologists studying educational institutions to be more aware of the problems of order and control which inhere in compulsory school attendance of children from subcultures characterized by varying degrees of violence and reared in ways involving much dependence on physical punishment. Given the apparent erosion of the traditional restraints of fear and awe of authority, what happens within these involuntary aggregates, especially after the age (ten? eleven?) when many slum children are largely out of parental control? Some of the local community aides, for example, described in Timothy Legatts's paper on this subject, have recently begun to retreat from situations where their repertory of skills to handle disruptive behavior in large groups is proving as inadequate as that of professionals.

Teachers' reluctance, noted by some contributors, to abandon grade-level groupings may be, in part, a consequence of their realization of how crucial the variables of age and size are in childrens' interpersonal relations. The presence of underachievers, who are much larger and older than others, is seen as a peril to classroom behavior control in groups where physical aggression is common. Some of the teachers' commitment to small classes may also reflect their concern about the contagion of disorderly behavior in larger groups.

Janowitz is more keenly aware of problems of order than are most others who have studied educational institutions. He knows, for example, that increasing citizen participation in poor neighborhoods often results in demands for more punitive school policies (p. 323). Yet even his work, despite its attention to the crisis of legitimacy, does not fully convey the present chaotic atmosphere of hectic emergency in many slum schools. Perhaps deterioration has been so rapid that published materials are bound to lag.

One final note: References (e.g., p. 293) to the demoralizing consequences of using uniform standards when grading slum students are puzzling. This book, like others on the subject, alludes frequently to core-city schools filled with children whose academic performance is far below grade level, ample evidence that giving passing grades for substandard achievement is widespread. Indeed, public protest over the meaningless high school diploma and demands for a national testing program are evidence of concern about a marking system which, while it temporarily relieves both pupils and teachers of some of the miseries of the public verification of failure, does not alter its troubling reality.

This book is a most useful addition to our small store of high-quality sociological materials on urban education, valuable both as a scholars' resource and for use in the growing number of course offerings in this field.

The Politics of Community Conflict: The Fluoridation Decision. By Robert L. Crain, Elihu Katz, and Donald B. Rosenthal. Indianapolis: Bobbs-Merrill Co., 1969. Pp. xx+269. $3.95.

Patterns of Local Community Leadership. By Linton C. Freeman. Indianapolis: Bobbs-Merrill Co., 1968. Pp. vii+138. $2.95.

The Search for Community Power. Edited by Willis D. Hawley and Frederick M. Wirt. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968. Pp. xiii+379. $5.25.

R. David Corwin

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The distribution of power in American society has important theoretical and practical consequences, and Robert L. Crain, Elihu Katz, and Donald Rosenthal (sociologist, social psychologist, and political scientist, respectively) have produced one of the most important pieces of research on this subject since Dahl and Hunter. The research differs from much of traditional decision-making studies in several ways, but the two crucial distinctions are (1) the authors studied a single issue (fluoridation) in a large number of cities (700) rather than a number of issues in a single city, and (2) the focus is on the system of local politics rather than the individual; it is a study of the process of decision making rather than the characteristics of the decision makers. Data were gathered by circulating three questionnaires, one each to the municipal clerk, local newspaper publishers, and public health officers in the 700 cities.

At first fluoridation seems to be inappropriate for an analysis of community decision making. Unlike many community issues such as urban renewal, there are no important political, social, or economic payoffs involved with the fluoridation controversy. Therefore key political figures even if they take a "pro" position may not deploy many resources to exert their will. What Crain and his coauthors have done, however, is to use this issue in a completely rational fashion to explore the nature of all community decision-making processes.

Puzzled by the repeated failure of communities to adopt fluoridation procedures (something assumed to be a reasonable health measure), the authors turned to theories of political alienation as the analytic context of the research. Contrary to what alienation theorists would predict, they found an antifluoridation position is not based on a reflexive negativism or political extremism, nor is a defeat of fluoridation referenda caused by lack of voter interest. Instead, "[the authors] conclude that the alienation argument is too glib, and that it seems to blind those who apply it to other social and political factors which, however complex, are probably more important for understanding the operation of the American political order" (p. 43). Instead, the authors propose a "participation" view as an alternative to "alienation theory." It is wide public participation, not nonparticipation (alienation), which spells defeat for fluoridation.

For example, they demonstrate that the very decision to offer the choice to the voters by a referendum (where the chances are almost 3 to 1 fluoridation will lose) serves to "legitimize" the issue and "prejudices the case against fluoridation" (p. 64). This is true even though the proponents

can marshal impressive support in the form of endorsements from community health officials, physicians, and local dental societies for their campaigns, while "the opponents of fluoridation enter the campaign frequently unorganized, with few political qualifications, with the support of no civic organizations, and few major governmental officials . . . [this] runs contrary to much we have been told by the writers on 'community power structure' " (pp. 97–98). It does indeed.

The authors also explore possible courses of action other than referenda. For an administrative governmental decision, favorable action seems to flow from "low levels of controversy, experienced leaderships of high status . . . and active support from major health organizations, and from organizations not exclusively connected with health" (p. 121). The mayor's support is an important factor. In regard to single administrative decisions, then, what the traditional community decision-making researchers report and the present writers argue is roughly parallel, but Crain et al. go further.

In the last section of the analysis, they examine the relationship between community political structure and innovation. They find that it is the organizational features of government—whether centralized, of the city-manager or mayoral type, or with active and strong political parties—that to a large degree determine the extent of citizen participation, and consequently, the outcome of the fluoridation decision.

In sum, Crain et al. argue that there are two levels of decision-making activity: public and governmental. Their "uncomfortable" conclusion is that local communities are not only poorly organized for making decisions, but "[a]pparently, there is no such thing as a progressive local political system" (p. 228). Moreover, they found that wide public participation seems to decrease the probability of the adoption of fluoridation and as James Q Wilson indicates in the preface, this may cause some problems for advocates of unconditional "participatory democracy."

Linton C. Freeman's tightly wrought study of decision making in Syracuse, New York, concentrates on what Crain et al. see as governmental decisions. The work was actually completed a decade ago and to some degree reflects issues that were current then. The study seeks to answer three questions: "(1) What is a community leader? (2) To what degree is leadership concentrated? (3) What factors offset differential access to leadership roles by various segments of the population?" (pp. 3–4).

After coordinating 250 interviews and conducting a newspaper search, they selected thirty-nine decisions representing the range of community institutional sectors for study. The authorities formally responsible for making the decisions were interviewed and using reputation as an index of leadership, the authorities were asked to identify those decisions in which they participated and would be recognized as a participant. For each decision that the subject claimed participation he was asked to nominate "all other people who [he knew on the basis of first hand information] were involved" (p. 30). This procedure provided a source of new informants and leaders, who in turn were also interviewed. All subjects were also given a

questionnaire covering items on social background, which were subsequently compared with a random sample of Syracuse adults.

Freeman finds the answer to his first question, "What is a community leader?" is substantially fixed by the particular research methodology of any study. For Syracuse, he concludes there are actually at least three different kinds of community leaders all of whom play a role of community decision making: institutional leaders, those of reputation, position, or organizational participation; effectors, those who "are the active workers in the actual process of decision-making" (p. 41); and the activists, those who may hold office in voluntary associations but who "by sheer commitment of time and effort to community affairs . . . help shape the future of the community" (p. 42).

To determine the degree to which leadership is concentrated, factor analysis was employed. The results suggested a wide dispersal of power in Syracuse. A second factor analysis demonstrated that power was further fragmented by issue because interest-groups clusters formed around issues which had a common substantive core. Freeman concludes that at one time leadership in Syracuse may have been of the elite variety; now it is essentially dispersed.

The analysis of the social characteristics of leaders revealed that the manner by which access to decision making was established was associated with these characteristics. Governmental officials come from more sections of the population than private influentials.

The study has some major weaknesses, including the implicit equation of participation with influence, a systematic ignoring of outcomes (it is possible to be a participant in many battles and to lose them all), and as the author points out, the failure to examine the importance of "depth" of participation. Even with these shortcomings, however, the work is a valuable study and represents a sophisticated methodological approach to the study of community power.

Willis D. Hawley and Frederick M. Wirt have edited a reader on community power studies which contains excerpts of some of the important books and articles in the field. The book is divided into six major sections, and each section is introduced with a short essay written by the editors which provides a conceptual framework for examining the crucial issues and serves to introduce the material. The sections (and authors) are as follows: "The Notion of Power" (Weber; and Simon); "Community Power: Ruling Elite Models" (the Lynds; Hunter; Vidich and Bensman; and Clelland and Form); "Community Power: The Pluralist Perspective" (Dahl, Wildavsky; Sayre and Kaufman; and Smith); "Locating Decision Makers: Alternative Strategies" (Dahl; Wolfinger; Ehrlich; Anton; Freeman, Farraro, Bloomberg, Jr., and Sunshine; and Presthus); "Some Continuing Problems in the Search for Power" (Agger, Goldrich, and Swanson; Long; Bachrach and Baratz; Gamson, Barth, and Johnson; March; and Harsanyi); and "Toward a Theory of Community Power: Future Research Directions" (Alford; Rosse; Bonjean and Olson; Agger, Goldrich, and Swanson; Hawley; and Walton).

All of the articles are reprints and the book will be helpful to those unfamiliar with the literature in this field. It will save many graduate students time in the library.

Controlling Delinquents. Edited by Stanton Wheeler, with the editorial assistance of Helen MacGill Hughes. New York: John Wiley & Sons, 1968. Pp. xx+332. $8.95.

Social Class and Delinquency. By Lynn McDonald. Hamden, Conn.: Archon Books, 1969. Pp. 240. $8.50.

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Researchers have generally neglected to study the influence of delinquency control operations on the lives of youngsters and, more broadly, on the community perceptions of and responses to juvenile behavior. *Controlling Delinquents* is addressed to these types of issues as found chiefly in the Boston metropolitan area. The studies vary greatly in scope and method, reflecting differences within and between disciplines of the nineteen contributors, from political science, psychology, anthropology, social work, and sociology.

Part 1 presents studies of the police and other agents of delinquency control, and of relations among organizations concerned with delinquency prevention. James Q. Wilson compares the manner in which delinquents are handled by two police departments, reporting that the professionalism of the "Western City" department results in more restriction on freedom of juveniles and higher delinquency rates than do the activities of the fraternal force in "Eastern City." Wilson's examination of why this is so is sensitive and suggestive.

Wheeler, Edna Bonacich, M. Richard Cramer, and Irving K. Zola examine orientation toward delinquency and delinquents among police chiefs, juvenile bureau officers, probation officers, psychiatrists, judges, and in more detail, factors associated with judicial disposition by the latter. The isolation of judges from one another and cleavages in attitudes among the groups studied emerge dramatically from this study. A paradox is discovered: severity of sanctions is found "to be positively related to the degree to which a judge uses a professional, humanistic, social welfare ideology in making his decisions." In view of the punishing nature of court and institutional experience, as perceived by the youngster and reported in part 2 (by Martha Baum and Wheeler, and by Brendan Maher, with Ellen Stein), this finding becomes very relevant to questions currently posed concerning juvenile justice, prodded by the *Gault* decision and other developments. Walter B. Miller, Rainer C. Baum, and Rosetta McNeil conclude part 1 with an analysis of the nature of relations among organizations whose purpose is delinquency prevention.

Part 2 also includes two chapters by James E. Teele and Sol Levine on

what happens to applicants to child-guidance and court clinics. Gaps in service appear, and it is found that about two-thirds of the juvenile offenders referred to court clinics are not accepted for treatment. Follow-up study of nonaccepted cases suggests some of the reasons families who feel the need for help and actively seek it often get lost in the maze of well-intentioned but understaffed agencies.

Part 3 is a mixed bag of studies in various delinquency-prevention program contexts. Franklin B. Fogelson and Howart E. Freeman explore the nature of legal problems of families with delinquent children, and their handling (very largely nonhandling) by the social work agencies "treating" these families. Robert E. Stanfield and Brendan Maher rehash once more the Cambridge-Sommerville youth study data, this time with a view to examining the efficacy of "Clinical and Actuarial Predictions of Juvenile Delinquency." The promise of the former once more is found to be unfulfilled, but the latter, too, lacks convincing demonstration within the framework of the study. David Kantor and William Ira Bennett discuss "Orientations of Street-Corner Workers and Their Effects on Gangs," and Cline, Freeman, and Wheeler describe a data collection system developed with the aid of modern computers for "The Analysis and Evaluation of Detached Worker Programs." Wheeler's concluding chapter captures the spirit of challenge of old practices and of change which characterize most of the situations studied in this excellent collection. The need is great for searching examination of policies and practices of all welfare programs and agencies, with a particular view of what happens to people and why, to "clients," "agents" and agencies, and communities. Who, indeed, are the "patients," and is the medical analogy part of the problem? These and many other questions remain, spurred and enlightened by studies such as these.

Social Class and Delinquency takes still another look at that hoary question. McDonald's review of research and theories concerning relationships between class structure and delinquency misses some studies but is more comprehensive than most, both in its attention to non-American sources, and specifically to the nature of the British scene, and in explanatory concepts discussed. The educational system in Britain is an especially important context within which to study the effects of class structure because of the early selection (by age eleven) of youngsters for "grammar" and "secondary modern" schools, the former offering an essentially middle-class, achievement-oriented milieu, and the latter tending to be working-class oriented.

McDonald's chief measure of delinquency consists of self-reports by fourteen- and fifteen-year-old boys in grammar and modern schools in four areas in and around London, selected to represent various mixes of middle- and working-class populations, and because permission to conduct the study was secured in these schools after many trials and tribulations. McDonald's accounting of these, and the candor with which she discusses other aspects of the data collection process, are both entertaining and informative. Data were collected by means of questionnaires administered by the author dur-

ing a three-week period in September and October 1964. Contrary to a number of American studies, social class (as measured chiefly by father's occupation), type of school, "stream" (placement on the basis of measured ability), and type of neighborhood all are found to be related to some of the types of delinquency studied with lower-class youngsters and areas, modern schools, and lower streams generally associated with higher rate of admission of offenses. Differences are greatest for offenses involving violence and property damage, with theft and misconduct yielding fewer significant differences, especially for the more serious offenses. Study of official delinquency rates in the areas where the schools were located generally confirms the self-reports, though it appears that social class accounts for a good deal more of the variance of official than of admitted delinquency.

McDonald briefly assesses her data theoretically and concludes the book with a long and perceptive, but somewhat polemical, discussion of implications for educational policy and practice. The balance between theoretical and applied concerns is quite different in the two books under review. I did not find either very convincing in this respect, though both are provocative and thoughtful. Basic data and sociological analysis—the latter particularly in the Wheeler volume—are the strongest contributions. From my point of view this is as it should be, but it is good to see progress of the sort represented by both of these volumes toward a more fully developed policy science of sociology, as well.

The Varieties of Delinquent Experience. By Bernard Rosenberg and Harry Silverstein. Waltham, Mass.: Blaisdell Publishing Co., 1969. Pp. 165. $2.75 (paper).

Present Conduct and Future Delinquency. By D. J. West. New York: International Universities Press, 1969. Pp. xvi+207. $8.50.

Delinquency: Selected Studies. Edited by Thorsten Sellin and Marvin E. Wolfgang. New York: John Wiley & Sons, 1969. Pp. 161. $7.95.

Causes of Delinquency. By Travis Hirschi. Berkeley: University of California Press, 1969. Pp. 309. $8.95.

Edwin Lemert

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The flow of books on delinquency continues unabated, testifying to the resurgent claim that the errant ways of the young asserts among social scientists. Few other areas of sociology generate as much theoretical virtuosity, empirical industry, and polemic fallout. The books under review are cases in point; taken together they illustrate the difficulties of taking them together. But if the collective view is jaundiced, distributively these studies are substantial and innovative. The order in which they are listed probably indicates the degree to which, good or bad, they will capture attention of the profession.

The Varieties of Development Experience, its authors tell us, is a modest effort to "rebalance the empirical scale . . . following a hard path of empirical testing" to counteract excessive dependence on official delinquency statistics. They studied three block samples of young people in the "worst slums" of New York, Chicago, and Washington, D.C., using unstructured interviews. Sampling the bottom of the economic barrel (50 percent of family incomes below $3,000) yielded high proportions of Puerto Ricans in New York, Negroes in Washington, and Southern whites in Chicago.

The classified and "averaged" contents of tapes led the researchers to conclude that ethnic diversity in reactions of slum youth belies the existence of a subculture of poverty and that upward mobility aspirations of youthful poor are weak or absent. Probing for moral consciousness among respondents disclosed it to be two-valued rather than lacking, expressed in "good boy–bad boy" ideation. Merton's concept of anomie is explicitly rejected in favor of a moral anomie which generally pervades society. Delinquency of the poor is merely a special case, matched by middle-class delinquency and white-collar crime.

Rigorous-minded readers may have questions about the method followed in this investigation, and the total sample (112) seems small to carry the weight of the generalizations. However, the purpose of discovering whether things said by sociologists about delinquency are true is laudable, the writing style is lively, and interesting—sometimes intriguing—data are cited to support the authors' views.

Present Conduct and Future Delinquency is a first report of a longitudinal study in the multiple-factor tradition. The sample is made up of 411 "normal" boys, aged eight to nine years, from a densely populated, English working-class, urban area. The objective is to determine how community, family, and individual factors described at these early years affect personality, performance, and social adjustment in later years. Hopefully, items or their combinations which predict future delinquency will be identified.

The study is concerned with the relationships between rated conduct and official delinquency, and the relationships between both of these and a synthetic variety of factors (IQ, maternal neuroticism, weight, height, physical surroundings, income, family size, and welfare assistance). While official delinquency is objective enough, for some reason it doesn't appear in the final intercorrelational matrix. Significant correlations appear among the factors, but they are not high, and in the few instances where they exceed fifty they are admittedly spurious.

Conduct ratings by teachers and psychiatric social workers did not correlate well, which made "combined assessment" necessary. Sensitivity to the possibility that contaminated measures and negative halo effects may have affected findings caused the authors to dub in a separate chapter on "pitfalls of interpretation," which is probably the most interesting and novel part of the report. The commentaries on reliability and validity problems tend to detract from the clarity of the findings, but there is a great deal to whet reader interest in the outcome of the study. Unfortunately, Parlia-

ment was so inconsiderate as to change the rules on delinquency in 1969, which may play hob with completion of the work.

Delinquency: Selected Studies is a collection of papers by graduate students reporting their applications of the delinquency index developed by Sellin and Wolfgang. This, which the latter summarize in a beginning chapter, is a calibrated bodily-harm, property-loss measure or descriptive code of juvenile offenses. While it substitutes for standard crime reports it is still tied to police records. The issue of unrecorded delinquency is glossed over on grounds that the proportions of those delinquencies made visible by complaints to police will remain constant over time. Since Sellin and Wolfgang were preoccupied with delinquent events, it was left to loyal graduate students to relate the events to participants.

The substantive chapters deal with delinquency and distance, ecology of delinquency, gang and group delinquency, internecine conflict, the offender, factors influencing police dispositions, and trends in robbery. The chapter on delinquency and distance carries coals to Newcastle, for it tells us what we already know—that delinquents commit their offenses close to home. The piece on ecology and delinquency offers a new way to distinguish delinquency areas, using predictive attribute analysis. Presumably liberal leanings of the author of this chapter caused him trouble with race, which comes out as an important differentiating factor, but shouldn't, "because it is fixed attribute like a birthdate, sex, etc. Gang and group-style delinquency are distinguished in another chapter, and a theory of internecine subculture is proposed to account for the former. This is a territorial defense conception.

Considering the uprisings in Negro ghettos of the nation during the 1960s, not excluding Philadelphia, where these data were gathered, the brief parenthetical references to race and crime in these researches seem strangely myopic. One is reminded of finely detailed anthropological studies of Chinese villages made during the Communist Revolution, barren of any references to the larger political world.

Causes of Delinquency presents a carefully reasoned theory of delinquency articulated with survey research data. Hirschi reduces all delinquency theories to variations of strain, cultural deviance, and social control With all the aplomb of a latter-day Durkheim, he weighs the theories deductively, then proceeds to their testing, leaving no doubts about his preferences for social control theory. In substance this, too, is classic Durkheim, with such things as bond, attachments, and involvement with conventional society being the sources of conformity, and their obverse the bedding grounds for deviance. In the absence of internalized controls people will deviate, hence no special motivation is needed.

Attachments to parents, to school, and to peers are considered, along with commitment to conventional actions (leading to adult status), to education, to high-status occupations, conventional activities, and established beliefs. The data prove least amenable to the strain theory, but cultural deviance, while more difficult to test, in some respects holds its own with social control. It is conceded that as yet unspecified group processes affect delin-

quency, but when they are precisioned they will supplement rather than undercut the author's favored theory. This is as close as he gets to symbolic interaction.

Hirschi's craftsmanship is well-nigh impeccable, and he represents survey analysis at its best. But it may be wondered if all his piety and wit can erase the shadowy questions about reliability and validity of questionnaire data. An even more serious doubt is whether he has isolated causes of delinquency or simply found associations between self-reported delinquency, facts, and attitudes, the order of whose occurrence remains problematical.

Violence and Social Change: A Review of Current Literature. By Henry Bienen. Chicago: University of Chicago Press, for the Adlai Stevenson Institute of International Affairs, 1968. Pp. xiv+119. $4.95.

Culture and Poverty: Critique and Counter-Proposals. By Charles A. Valentine. Chicago: University of Chicago Press, 1968. Pp. xiii+216. $5.95 (cloth); $2.50 (paper).

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These two books are much alike: both deal with the problems of civil disorder and urban poverty; both are concerned with theory; both conduct a wide-ranging critique of current literature; both are rather thin essays which, while they certainly deserve publication, may not deserve hard covers.

Bienen's work is a "non-book." Essentially an annotated bibliography, it started life as a working paper for a study group on violent politics and modernization, conducted in the summer of 1967 by the Adlai Stevenson Institute of International Affairs in Chicago. Moving into what was seen as a difficult, emotion-fraught, and largely uncharted field, the group asked Professor Bienen to make a comprehensive survey and assessment of writings on the subject of violence. Because it appeared as a pioneering work, the paper was deemed worthy of a more permanent form.

Bienen's book deals with writers from Machiavelli to Regis Debray and is broken down into four parts: violence in the ghetto, guerilla warfare, revolution, and totalitarianism. The author is led to emphasize totalitarianism because he found that most of the literature dealing with violence as a tool of innovating elites appeared only under this heading. Similarly, organization building through the use of group violence has been treated in the past almost exclusively in terms of secret police and the behavior of unpopular authoritarian regimes, such as Czarist Russia and Nazi Germany. He notes a curious paradox: in the works of famous insurgents of the Left (who share libertarian values) time and again the theme is sounded that through violence, organizations can be constructed and modernization achieved; yet this aspect of their work has been generally overlooked. Georg Sorel's assertion that a class can be resurrected through violence is like

Franz Fanon's argument for violence as group therapy. However, a blind moralistic spot afflicted democratic thinkers until the crushing appearance of civil disorder in the United States during the last decade. The viewpoint of scholarship has now been liberated and violence can be studied without either disparaging or condoning it.

Bienen's paper must be viewed as an early attempt to comprehend the literature. It stands up quite well as a pell-mell selection of key ideas from a variety of sources. With each cluster of notions and theories, the author raises a series of ad hoc questions which require further research and reflection. However, there is neither unity nor consistent theory in the whole, and the questions strike one as a shatterburst of uncoordinated fragments. It is no longer an adequate starting point for serious students of political violence and social change.

Valentine's work is more deserving and current. The work is a study of poverty theory rather than of the poverty problem itself. The author attacks the "culture of poverty" myth on the grounds that it is constructed by theorists who project their own middle-class bias. The myth focuses on the victim rather than on the social structure, postulating the existence of a self-perpetuating lower-class way of life, implying that people are poor because they like it that way. Valentine attacks the theory as it is used in such documents as the *Moynihan Report*, charging that such patronizing approaches undertake to combat poverty by changing the culture of the poor, rather than the fact of poorness itself. Valentine makes this point over and over again as he takes on the most celebrated commentators and students of the poverty problem.

Valentine argues that most information on the poor derives from policemen, judges, and welfare workers. These are the domestic American equivalent of colonial administrators and missionaries who by their very function are disqualified from accurately describing the indigenous lifeways of their subjects.

To counteract this bias, Valentine's prescription is for further ethnographic research on the poor—for more studies which seek to describe the culture world of the underprivileged according to its own internal logic and order. Valentine prefers to describe poverty as inequality and deprivation; and he delineates solutions in terms of eliminating these by endowing the poor with special rights and with "positive discrimination" in their favor, including greater economic and political control by the poor of the resources and programs of which they are presently the objects.

Valentine's work is of value in thinking through the metalanguage and framework of values which one brings to the study of any social phenomenon.

The Affluent Worker: Industrial Attitudes and Behaviour. By John H. Goldthorpe, David Lockwood, Frank Bechhofer, and Jennifer Platt. Cambridge: Cambridge University Press, 1968. Pp. 206. $7.00.

The Affluent Worker: Political Attitudes and Behaviour. By John H. Goldthorpe, David Lockwood, Frank Bechhofer, and Jennifer Platt. Cambridge: Cambridge University Press, 1968. Pp. 95. $5.50.

The Coloured Worker in British Industry. By Peter L. Wright. London: Oxford University Press, for the Institute of Race Relations, 1968. Pp. xvii+245. $6.25.

The Motivated Working Adult. By Ray C. Hackman. New York: American Management Association, 1969. Pp. 206. $13.00.

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In the 1950s the upper layers of the British working class experienced a relatively rapid rise in their living standards. Opinion polls and market research reported a sharp increase in the number of manual workers buying cars or houses—and most significantly there was a considerable overlap between the better-paid manual workers and the poorer-paid white-collar groups. The pattern was of course familiar, but the sudden acceleration confused the commentators. At the same time the Conservative party, backed by heavy working-class votes, returned to power in 1951 with a majority of twenty-six over Labour. In the 1955 election, this majority was increased to sixty-seven, and in 1959 to 107. Such a pattern had never previously occurred in British politics.

To explain it, most journalists and many academics took up the notion of *embourgeoisement.* Many skilled workers enjoyed a new sense of middle-class income and comfort, ran the argument. Frequently too, their work took them out of traditional working-class areas both geographically, and through new contacts, socially too. They found themselves social hybrids, and responding to difficult cross-pressures, weakened in their traditional support of the Labour party. And therefore, argued the critics, as the workers won increasing affluence, Labour must lose.

Time has proved them wrong. But no doubt the pattern and the argument will be repeated many times both in Britain and other societies. And if only at that level, these reports—the first two of a series—by the four Cambridge sociologists will have an abiding interest. Their carefully designed, and scrupulously reported research is based chiefly on a sample of 229 prospering workers in Luton, a booming town near London with relatively little of the stamp of the traditional working class community about it.

In their first report, they reestablish (though with painful slowness) a good deal of common sense in what had deteriorated into a commentator's parlor game. The factory, they find, offers fat wage packets—but the price is "the experience of monotony, of unabsorbing work and of an excessive pace of work." Yet many have deliberately chosen this job when they could have taken others more intrinsically rewarding. The expressive aspect of work has not counted as strongly as the instrumental. The authors criticize the "human relations" approach, with its stress on the primary work

group; and also that rival approach which stresses the influence on roles and relationship within the new technological patterns of work. As they unfold their results, they reveal that both these approaches tend to neglect the attitudes which workers bring to their work. And, faintly bringing in the baffled voices of personnel officers or trade union officials, they reveal that to "the manual labour force at any rate, the firm was simply a place where they worked and beyond this had little part or meaning in their lives." Their attitudes to their union reflected this: there was markedly less of the emotional appeal to the moral horizons that possibly might have been the case in more traditional groups. There was a readiness to contract out of political dues, and to criticize the strong link between the unions and the Labour party as industrial and political wings of the same community movement. But there was certainly no slackening in interest in the function of the unions in improving the pay—and to a lesser extent—the conditions of the immediate job. All this was seen against a background of rising standards of living which was somehow automatic, or at least an article of faith: "Things will *have* to improve—that's evolution."

Moving their plain glass reflector into political attitudes, the researchers find that, contrary to the common explanation of the time, this increased affluence, lessening of traditional ties, and more calculating attitude to work and to unions did not lead to a marked switch in political sympathies. In this righter, more confident monograph, they point out—as much by well-conducted argument as by extensive evidence—that the new affluence has by no means changed the workers' position or interests in society. His political attitudes are but one fragment of a broadly collectivist approach to life. Cheap hire purchase terms can hardly much alter the facts of his history, his early socialization, his economic interest. On the other hand, a more subtle but powerful pressure may come as the proportion of white-collar jobs increases; and, more and more, his wife, family, and friends take them up.

These two Cambridge studies (though somewhat too eager to establish their academic presence) have about them a measured common sense, a refreshing frankness, and a steady competence which throws up the unreality of much current discussion of the nature of working-class life. Traditional communities break up, and new work, new housing patterns, the mass media, fresh educational opportunities—all change working-class life. And yet, one wonders, hasn't such a process been occurring for a very long time —long before the new investigators perceived it? And how much—relatively—has it changed the surprisingly resilient styles of working-class life? And how much has it changed their fundamental economic interests?

Paradoxically we may well find—and these studies seem to support the view—that affluence (that treacherous word) will in fact sharpen the worker's interest in his wage packet, especially if it brings with it declining chances of promotion from the shop floor, an increased wish to buy more goods for his family, and work which, at the subautomation level, is increasingly deadening and meaningless. In that situation, the union gains in obvious usefulness and general solidarity is likely to heighten, and those ex-

periences in turn may lead to sharper political awareness. Whether this in itself will lend support to the Labour party (as it has in the past) is something the authors take a little for granted. But political parties are not stable or single entities; they are loose coalitions competing, under their generals, for myriad interests. And the reader may well expect them to weave in and out of office in patterns connected directly neither with *embourgeoisement* nor with this prolonged but salutary critique of that once-fashionable thesis.

But during the boom conditions of the 1950s, another marked change came over British society: the arrival of "the archetypal stranger"—the colored worker. "At this time you couldn't get an armless, legless man, never mind an able bodied one. Any worker could leave the works and get a job literally within three or four minutes simply by going to the factory next door. We tried recruiting Irish labour but this didn't come off. The Manager went over to Ireland himself. . . ." This works superintendent is one of the many telling voices that play through Peter Wright's survey of how British firms in the North and Midlands reacted to the arrival of the immigrants. His survey is built on nondirective interviews with managers in fourteen firms; interviews at thirteen of the firms with workers, white and colored, on the job; and a postal survey completed by fifty Midlands companies. Poor cooperation by the firms, language difficulties with the immigrants, and an overall plan which was too ambitious for the time at his disposal, meant that a theoretically well-designed sample became something of a kaleidoscope. Nevertheless a valuable descriptive study emerges, and is strong enough to allow a number of very striking analyses which have played their part in informing the general work of the Institute of Race Relations and sharpened the quality of public discussion. His findings are in line with previous studies suggesting that immigrants from Africa and the West Indies are generally anxious to adapt to many of the norms and values of British society, and indeed arrive with high expectations not only of improved material standards but of merging into the host community. As with previous researchers, Wright confirms a general picture of Asian immigrants as an accommodating rather than an adapting group who, while ready to accept and share in many of the public norms of British life (in return for full civic rights and noninterference), seek quite as strongly to preserve their own culture, within the group, quite intact.

His report shows how firms tended to recruit from one specific group of immigrants—either all Sikhs or all Jamaicans and so on. Supervisors found that the working skills which West Indians initially claimed to possess were often too outmoded to command similar jobs in Britain but, because of the shared language, they were easier to train and supervise, if more difficult to control. Asians tended to soon fit into the stereotype of the willing worker who required little in the way of extra facilities, extra training, or indeed personal attention. Relationships between the West Indians and the Asian immigrants tended to be as weak as those between the colored and white worker, and Wright does a sensible job in analyzing the poverty of "prejudice" as a term to describe what normally happens. He begins a promising

discussion of the circumstances which legitimate relationships between white and colored workers, distinguishing neatly between relationships at work and out of work (though rather assuming that the white workers carry over their relationships among themselves from work to life outside). But then the book, sensibly argued if loosely edited, heads homeward with a discussion of the then-promised antidiscrimination laws. A mistaken judgment. Now we have the antidiscrimination laws. The annual number of legal incidents is negligible. But the situation remains the same, and we could have done with far more straight sociological analysis to help us see it clearly. That analysis, to progress far, would have to take a leaf out of the Cambridge books, and concentrate far more on how the immigrants perceived themselves, their situation, and their desires. It would need also to link up the world of school with the world of work, for the time is not far off when most immigrant workers in Britain will have attended British schools, and to my judgment that creates a distinctly different situation. And none of this debate would be any the poorer were it to be reminded of what we already know about the strengths and weaknesses of working-class communities in Britain, including their sense of the stranger, dyed deep into the grain long before the new immigrants reached Britain.

Coming after these, Dr. Hackman's interim report from the Psychological Service at Pittsburgh jars a little on my insular sensibility. None the worse for that, Hackman makes a fresh attempt (there is a kind of bold dash right through his work) to describe and to measure work motivation in adults. The results reported here come from administering the test on over 1,000 workers. Much of the evidence offered is based on information obtained by asking people to describe themselves, and the point of the hunt is largely the discovery and selection of the highly motivated, driving men or women who can then rise into senior management and so distribute reinforcements (money, conditions, esteem) throughout the factory. Thus, overall efficiency rises and individual acceptance and satisfaction with work roles is extended. It seems superfluous to say more than that we have now moved clearly to the other end of the telescope and are seeing the work situation from the point of view of the directors. In another context, this would be the key theme to explore, but here and now the chief value of the book to a sociologist is the always fresh and often very delicate work in which Hackman analyzes the cluster of reasons, attitudes, and feelings behind the individual's work motivation. A refreshing change from the cart-horse plod of "instrumental" and "expressive" that we hear through so many current texts.

The Nadars of Tamilnad: The Political Culture of a Community in Change. By Robert L. Hardgrave, Jr. Berkeley and Los Angeles: University of California Press, 1969. Pp. xiv+314. $8.75.

Culture and Change in India: The Barapali Experiment. By Thomas M. Fraser, Jr. Amherst: University of Massachusetts Press, 1968. Pp. ii+460. $10.

Social Tensions in India. By G. S. Ghurye. Bombay: Popular Prakashan. Pp. x+552. Rs. 72.00.

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The Nadars of Tamilnad is an extension of the author's Ph.D. dissertation for the University of Chicago based on a field study he conducted in 1964–65. It is a study of the political history of a single caste—the Nadars—which has risen from the lower rungs of ritual hierarchy to a position of status and power in contemporary Tamil Nadu, India.

Missionary correspondences and writings, newspaper reports, records of the cast associations, and a number of mostly descriptive interviews are the sources of data on which the author bases his analysis. He describes effectively the depressed status of Nadars as found by missionaries; their mobility aspirations expressed through change of religion, pursuit of education, and abandonment of traditional occupation; their efforts at Sanskritization; and the two caste organizations.

Since Hardgrave had to rely on British and missionary sources to construct the early history of the community, the Nadars emerge as a sordid lot Apart from the biases and unreliability of these sources, the utility of these sources to construct political history of the community is, to say the least, dubious.

The clashes between the Nadars and other communities are attributed to the Nadar's claim for "a higher, more ritually pure position in the hierarchy" (p. 78), which other communities resented. Later on, the author points out that "each community found itself either financially indebted to, economically dependent on, or in competition with, the Nadars" (p. 114). This aspect of "class struggle" might usefully have been further explored. In the author's description, the Nadars, who were a minority-conscious community, because of hard work and thrift became "merchant capitalists." But they have not yet reached "industrial capitalism." The reasons for this, although not central to the research question of the book, may be worth pursuing.

In order to "tap the latent reservoir of sentiments toward the political world" (p. 240), Hardgrave used a modified TAT. I myself saw the protocols when they were pretested in Madurai. The term "modified" is a gross understatement. One wishes that Hardgrave had provided further information on the "modification," as well as additional information as to how the TAT was used, how the responses were collected, how they were scored, and how the sentiments were measured. Hardgrave provides five life histories. One wonders to what extent the lives and sentiments of these five are supposed to reflect the Nadars's social and political history! The lack of substantial empirical evidence provided in the book is the major drawback of the study. For example, the names of a few highly placed officials who are also Nadars are provided as an indication of the social position of the Nadars. But one wonders what percentage of all highly placed officials in the

state are Nadars. It is apparent that Kamaraj came into political prominance in spite of and not because of Nadars. Yet Hardgrave claims that Kamaraj's rise is an indication of the transformation of the community. In the absence of evidence as to whether the Nadars have contributed proportionately more political leaders and highly placed officials than are warranted by their numbers in the state, one is not able to evaluate Hardgrave's claim.

These remarks are not meant to distract from an otherwise excellent study of a complex problem. As a study of the caste organization of "six town Nadars," it is very good. It is hoped that Hardgrave, who styles himself as an "honorary Nadar," will pursue additional facets of this interesting community.

In *Culture and Change in India*, Fraser describes the Quaker (AFSC) (American Friends Service Committee) Pilot Project in Barapali, Orissa, India. From 1952 to 1962 a program of community development was conducted with the objective of (1) assisting the social and economic betterment of the area, and (2) of developing and testing new techniques in community development which could be followed by other agencies. The U.S. government (through the Agency of Technical Cooperation Administration), the AFSC, and the state government of Orissa collaborated in the project. Fraser, who spent two years in the project, through field observations and data on the files of the project describes and evaluates the project—mostly ten case studies of specific projects. They are: village worker training (largely a failure), health worker training (mostly a failure), village mechanic training (successful), well program (successful), latrine program (a failure), poultry farming (a failure), vegetable farming (successful), weavers' cooperative (partially successful), prepaid clinics (a failure), and leather workers' cooperative (successful). The objectives of each specific project, how the Barapali Service Center went about implementing them, and why they succeeded are all adequately described.

Among the many reasons for failure of most of the projects, two stand out: (1) The frequent turnover of the American technicians. In specific projects the time lag for replacement of technicians was at least six months. Often the successor differed in philosophy and techniques from the previous technician. This is inevitable in a relatively long-standing project and when it is mostly financed and run by "outsiders." (2) The large landowners saw many of the projects as a threat to their vested interests, so they contributed overwhelmingly to the failure of many projects. Unless such vested interests are removed, whatever the nature of the experiments in cultural and social change, they are doomed to failure.

When the project was started, a few surveys were conducted. If only similar surveys were conducted toward the end of the project and "before" and "after" data are presented, one could have had an objective measure of the change or development due to Barapali Village Service Project.

By the author's own admission, generalizations and theoretical hypotheses are kept to a minimum. But the book can be read profitably by

anyone who is involved in community-development projects, and especially by those who are planning to initiate them.

In *Social Tensions in India*, Ghurye deals with tensions arising due to the presence of minorities in India. Such tensions are mostly exhibited in the area of Hindu-Muslim relations and in the national language controversy. The tensions in the former are more intense because Muslims—Ghurye uses the term "Muslim Indians"—are minorities in religion, culture, and language.

Ghurye reviews Indian history to show the external orientations and affiliations of the Muslims. He also attempts to deny the thesis of Hindu-Muslim fusion in art and architecture. Perhaps what is more of interest to sociologists is the section dealing with communal riots. Ghurye draws on newspaper clippings that he kept in his file. By his own admission, these files were incomplete. Whether a complete set of newspaper clippings would have changed the inferences is anybody's guess. Communal tension-increasing statements by Muslim leaders are extensively quoted and analyzed, but similar statements by Hindu leaders are absent.

The Changing Village Community. By Joel M. Halpern. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967. Pp. viii+136. $4.95 (cloth); $2.50 (paper).

Peasants No More. By Joseph Lopreato. San Francisco: Chandler Publishing Co., 1967. Pp. xv+281. $5.50.

Peasant Communism in Southern Italy. By Sidney G. Tarrow. New Haven, Conn.: Yale University Press, 1967. Pp. xvii+389. $8.75.

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Sidney G. Tarrow has written a fascinating account of the Italian Communist party in southern Italy, in which he manages to integrate survey and census data with secondary sources, both historical and contemporary, to produce a singular contribution to our understanding of political development and comparative communism. Objective conditions vary greatly between the North and the South of Italy, the latter having much in common with underdeveloped societies in the non-Western world. The North is industrial, while in the South industry is mostly confined to artisan manufacture. Agriculture is unstable and unproductive, with both agrarian resources and occupational roles being seriously fragmented to the detriment of rational farming. In the postwar period, there was a land question of considerable importance. Tarrow is mainly interested in the non-revolutionary outcome of this question, particularly in light of Communist party involvement in it.

Antonio Gramsci, the leading theoretician of Italian communism in its formative years, foresaw a Communist party that could successfully organize a revolutionary struggle on two fronts: on the one hand, it would con-

duct a war of movement fought by workers and peasants and led by "organic" working class and peasant intellectuals. On the other hand, the party would fight a war of position—a long campaign of passive resistance inside the superstructure of bourgeois society and within the rules of parliamentary democracy. This war would be waged by "traditional" intellectuals, drawn from the ranks of the bourgeoisie. In fact, the postwar Communist party in Italy has abandoned the first of Gramsci's strategies, adapting itself both organizationally and ideologically to the war of position and winning significant victories in parliamentary elections. "Turning toward revolution would cause a loss in (the party's) mass support and bring about critical internal dislocations" (p. 155).

Tarrow examines the consequences of this retreat for the party's program and structure in the South. Where Gramsci envisioned an alliance between northern workers and southern peasants, contemporary party theoreticians have devalued the role of the peasantry relative to the workers, broadened the alliance to include "bourgeois democratic elements," and transformed the goal for the South to one of limited agrarian reform: "the land to he who works it!" This program attracts large numbers of southern peasants to the party's ballot, but is self-defeating in terms of agricultural and industrial transformation. The ideology fails to provide "an effective symbolic guide for action, a sensitive basis for communication and solidarity, or a compelling image of what it means to be a member of the Communist Party" (p. 268). Finally, the party is less-well organized in the South than in the North, having a topheavy bureaucracy of middle-class intellectuals and functionaries, and a shifting base of peasants who are attracted to it for the "wrong" reasons; that is, to obtain private property. At the same time, the Christian Democratic party has successfully blunted the land question by meeting peasant demands for land reform. Government programs have succeeded mainly in dividing land, not in transforming agriculture. However, neither has the Communist party been able to organize viable peasant cooperatives in the South as it has in central Italy.

Tarrow sees the South as a society once traditional, but now in a period of transition, in which "a new organization of social roles has not yet crystallized to take the place of the system that broke down in the nineteenth century" (p. 41). I find this assessment to be too vague, for it applies in a way to all "underdeveloped" societies without illuminating the specific conditions of any of them. It seems to me that there are many societies, or part societies, in the world, which, through a combination of environment, prior social organization, and the international balance of power, are destined not to develop. These are not "transitional" societies (moving from traditional to modern), but something else for which we do not yet have an adequate vocabulary. I would argue that nineteenth-century southern Italy was not traditional (certainly not feudal) in the usual sense of the word; that it was very much a part of international capitalism, though in a semicolonial or subordinate status. This, plus a relatively poor and unyielding environment, helps to explain why, in spite of a land question and peasant rebellion in the twentieth century, the southern peasants were not abjec-

tively in a revolutionary position. One might even argue that this was a cause, rather than a consequence, of the failure of Gramsci's Leninism in Italy, and the early shift of the Communist party to the right.

It is unfortunate that Tarrow's book, which is so rich in relevant and interesting data, deals only summarily with the phenomenon of emigration, for this has probably been as significant as land reform in dampening the revolutionary enthusiasm of the peasants. In the period between 1955 and 1962 alone, one can conservatively estimate that between three and four million persons left the South, most of them becoming temporary expatriates in northern Italy and western Europe. More than any other factor, this represents an index of the specific role which southern Italy has played in the European and Common Market context—a role over which a national Communist party could have little influence, even should it choose to, which it has not.

South-Italian emigration is the critical issue to which Joseph Lopreato addresses his work, *Peasants No More.* He notes that the push for migration derives from an attempt to escape harsh material deprivation, persecution, and status degradation associated with poverty. Furthermore, the peasant experiences a profound "psycho-cultural rejection" of his own society and way of life. This sense of relative deprivation has been greatly enhanced in the postwar period, as mass parties and mass media have penetrated the South, and as earlier migrants have become object lessons to others. For emigration alters the social standing of the migrants (should they return) and their close kin who remain in the community. Lopreato has devised a sound methodology for measuring social status in small communities, in which criteria for social ranking, and the rank orders themselves, are determined by the respondents. On the basis of his findings he can demonstrate that stratification in the Calabrian community under analysis did change significantly between 1900 and 1959, primarily as a consequence of emigration. Briefly, an impoverished and homogeneous peasantry has become differentiated, so that the two middle strata of 1900 are now four. By means of a questionnaire administered to a carefully selected sample, Lopreato has also gathered information on attitudinal changes accompanying emigration. The changes are, of course, in the direction of modern and secular "middle-class" values, so much so that the author can conclude that emigration is a kind of substitute (a functional equivalent) for industrialization. Like Tarrow, however, he is not precise about the position of southern Italy in the European community of nations, and hence offers no realistic assessment for the future. The new "middle class" in southern Italy is a class in name only; it has the power to consume wealth, but not to create it. Moreover, in many parts of the South, emigration remittances, funneled into education, have, in the absence of industralization, created a rapidly growing strata of unemployed *diplomati.* At the same time, the liberation of the peasants from *la miseria* and desperation is tenuous, resting as it does on access to employment outside of the region.

Joel M. Halpern's *The Changing Village Community* is a far-ranging attempt to confront an issue that is central to both of the preceding works:

the consequences of transactions which occur between industrial and rural populations. Indeed, it is a very ambitious undertaking, for in the brief space of 132 pages, the author sets out to describe a socioeconomic revolution in agrarian life which is comparable, he says, with the neolithic and the industrial revolutions in its effects on human existence. The key ingredients of the "rural revolution"—population growth, urbanization, and national integration—are consequences of the diffusion of technology, trade, and secular attitudes associated with the industrial revolution in western Europe. Halpern feels that these changes are making their presence known in all parts of the world, crosscutting political and national boundaries. To illustrate his argument he presents case material drawn from Yugoslavia, Mexico, India, China, the USSR, and the United States.

Yet, while he is specific about the modernizing experiences, of these societies, he is also, like our other authors, reluctant to consider nondevelopment as a category in the real world. Hence he does not analyze the process of capital accumulation with a view toward distinguishing sound investment from a squandered, or dispersed spending. Nor does he systematically examine expanding urban centers or "primate" cities in relation to one another, assessing their chances for development in these terms. It is indicative, I think, that Professor Halpern emphasizes the universality of the rural revolution. For while he specifically argues that the process is not unilineal, he does seem to suggest that it is unidirectional and ineluctable. This is to overlook the fact that one possible consequence of the hegemony of industrial nations is the economic stalemate of some societies, such as southern Italy, rather than development.

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The Impact of City on Racial Attitudes[1]

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Probability samples of approximately 175 black and 175 white respondents were drawn from each of fifteen American cities. This report deals with the extent and ways in which racial, urban, and certain other attitudes are influenced by city of residence. The initial evidence is formal in character and simply shows that city of residence accounts for significant proportions of variance in a wide range of attitudes—proportions not greatly different from those accounted for by five individual background variables (age, sex, education, income, and occupation) and largely independent of these background variables. Attitudes best explained by city seem to be those with some urban content, and especially those that involve individual perceptions of the immediate urban environment. The outcomes are similar for black and white respondents, and for some specific attitudes there is surprising similarity in the ranking of cities across race. Questions are raised about the relation of attitudes to urban riots; Detroit, which had a major riot, is moderate relative to other cities in attitudes presumed to be relevant to open racial conflict. Particularly promising is the finding that black dissatisfaction with life conditions in their city goes down as black percentage of the population goes up—possibly because the city government becomes more responsive to black needs. Liberal racial attitudes on the part of the white population are closely associated with variations in white educational levels by city. While part of this relationship is simply a reflection of individual level correlations, part appears to be due to the indirect effects of education on the general climate of opinion in a city. City of residence would seem to be a useful explanatory variable in studies of attitudes.

Two quite different approaches have been taken to explain the nature of urban racial tension in America during the 1960s. One line of explanation, which seemed especially justified immediately after the outbreak of the Newark riot of July 12, 1967, focuses on the problems of the specific cities in which riots occur. Newark was an exceptionally good case for this type of explanation because it ranked high among large cities on such social problem indicators as unemployment, illness, crime, and poor housing; it

[1] The authors are greatly indebted for advice and encouragement to Angus Campbell, director with Howard Schuman of the larger fifteen-city study of which this is one report. Kendra Head provided essential assistance at many points in the tabulation with analysis. Otis Dudley Duncan, Gudmund Iversen, and Peter H. Rossi made helpful suggestions on an earlier draft of this paper. The larger study was funded mainly by a Ford Foundation grant, with supplemental analysis supported by the University of Michigan Survey Research Center.

also had a reputation for tense relations between a rapidly growing blac population and a predominantly white city government.[2]

Ten days after the Newark riot this explanation was dramaticall challenged when an even more extensive riot began in Detroit. On mos of the indicators mentioned above Detroit was not at all at the unfavo able extreme, and in some respects (for example, percentages of bot black and white home ownership) appeared to be a comparatively ad vanced city. Detroit also had the image of a vigorous city governmer which, while largely white, had drawn substantial Negro electoral sup port and seemed to be responsive to the black community. The 196 Detroit riot suggested that race-related disturbances in the late 1960 might not be linked closely to variations among cities in rankings o social problem indicators. Perhaps racial tension is so severe in mos American cities that all are above some "riot threshold" and variation among them are trivial; the outbreak of rioting in particular cities ma be simply a matter of chance incidents, or variations in police tactics, o other factors that have little to do with basic social, economic, an political differences among cities.[3]

The present report is part of a larger study of black and white attitude in early 1968 in fifteen major American cities. For much of the study w have combined the fifteen city samples into a single large urban sampl for each race and have looked at racial and urban attitudes in relation t standard individual background factors such as age, sex, education, in come, and occupation (Campbell and Schuman 1968). In the presen report we reverse this approach and ask to what extent variations in a set of attitudes, beliefs, and experiences are a function of difference among these fifteen cities. Since these are cross-section samples from a particular point in time, we cannot hope to identify the "causes" o riots; even meaningful variations between riot and nonriot cities coul

[2] Explanations emphasizing "social problems" were particularly put forward by popular publications that had to make immediate sense of the riot. For example *Newsweek* (1967, p. 21) called Newark "a textbook example of the city in crisis Newark has very nearly the worst of everything in urban America—the worst hous ing, the worst crime rate, the worst rate of VD and new tuberculosis cases, an unem ployment rate so stubbornly high that it is one of only five U.S. cities that qualify fo special Federal economic aid. When the ghetto finally exploded one muggy night las week, the riot was the worst since Watts in sheer destructive fury—and the only sur prise was that the blowup was so long in coming." An interpretation concerned more with political conflict occurs in the *Report of the National Advisory Commission on Civil Disorders* (National Advisory Commission on Civil Disorders, 1968, pp. 30–31)

[3] There have been few attempts thus far to account systematically for the recent riots (those since Watts). Wanderer (1969) presents zero-order correlations between severa measures derived from census figures and occurrence of urban riots. White (1968 provides a multivariate approach, but little interpretation. His results for percentage of nonwhite are similar to ours below. Spilerman (in press) presents a more detailed multivariate analysis, with primary emphasis on city size. Earlier studies deal essen tially with other types of riots (see Bloombaum 1968).

be either causes or effects of the riot events. But we can determine whether important city differences in attitudes do occur, and provide some information about their configuration and interpretation.

Our initial approach is to treat "City" as a general explanatory variable, much as one treats age or education as explanatory variables. (The word "City" will be capitalized when it refers to this variable.) Each respondent is categorized by his or her city of present residence, giving fifteen classes to the variable. Since we have no a priori way to order the cities, the classes provide only a nominal level of measurement, and we use an analysis-of-variance approach to test whether City accounts for important and reliable proportions of variance in the attitudes of individuals. As part of this general question, we attempt to determine what kinds of attitudes are most affected by City. Since we carry out the analysis separately for blacks and for whites, we can also determine whether effects of City are similar or different for the two races.

Our next general question is whether City effects can be reduced to demographic compositional differences among the fifteen cities. For example, do the city samples differ in attitudes simply as a reflection of city variation in educational level or age composition, or are inter-city differences due to intrinsic community characteristics?

Third, we look at the ordering of cities on particular variables. Of special interest here is a comparison of city orderings for Negroes and for whites on questions asked of both samples. Finally, we introduce several social characteristics of cities to add to our interpretation of City effects. We also attempt to relate attitude variations across the fifteen cities to extent of rioting during 1967. However, our aim is not only less but also more ambitious than attempting to account for the occurrence of riots as events. We are really interested in the usefulness of City as an independent variable for understanding attitudes and beliefs measured in national interview surveys.

EXPLANATORY VARIABLE: THE SAMPLE DESIGN

Our sample—and our focal explanatory variable—consists of fifteen cities selected purposively, and within each city of separate probability samples of the Negro and white populations. The city names, sample sizes, and response rates are included, along with a discussion of response rate effects, in Appendix A of this paper.[4] Interviewing was carried out from January to March 1968.

The fifteen cities were selected primarily on theoretical grounds but

[4] The design called for cross-section samples of approximately 200 Negroes and 200 whites within each city, with eligible respondents ranging from sixteen to sixty-nine years of age. Although some clustering was used (segments of expected size five) and minor modifications were introduced to take account of variations in household size, departures from simple random cross-section samples of the respective Negro and

also because of practical constraints arising from the presence or absence of adequate field staffs in particular cities. We decided to focus on the Northeast and North Central parts of the United States, the major riot areas in 1967, but included Baltimore from the border states and San Francisco in the West. We purposely included both cities having major riots and cities which at that point had had no more than minor riots, if any. Finally, we added Gary because, along with Cleveland, it had recently elected a Negro mayor, and we were especially interested in the effects of city government on urban attitudes. The purposive selection of cities was justified, given the relatively small number that could be included and the initial focus of the study on urban riots, but this mode of selection poses problems when it comes to generalizing beyond the fifteen cities themselves.

There is no way to make rigorous statistical inference to a larger universe of cities, but the following points provide some guidance for generalization beyond these particular cities.

1. The fifteen-city sample includes nine of the ten largest Northeast and North Central cities in the United States, and eleven of the fifteen largest cities in all parts of the country. With the exception of Gary, all fifteen cities fall within the thirty largest in the country. Thus this sample is most representative of the very largest American cities.

2. The cities are more representative of the total black urban population than of the total white urban population. Of the estimated 14.8 million black citizens living in metropolitan areas in 1966, more than one-fifth resided in the fifteen cities sampled here. Only about one-tenth of the white metropolitan population, however, was included in these fifteen cities at that point. More important from the white standpoint, we do not include here any suburban populations. Although suburban white samples were gathered around two cities (Cleveland and Detroit), they are not included in the present analysis because many of our questions refer to city officials and problems.[5]

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white populations of these cities are very small and will be disregarded here. The black and white populations were sampled separately to keep their sizes constant and adequate for between-city comparison, regardless of their proportions within particular cities. Actual sample sizes range from 109 to 255 for the black samples, and from 121 to 242 for the white samples. Departures from initial target sizes of 200 were due partly to variations in the success of various population estimates needed for sampling and partly to variations in response rates. The former was expected, given the absence of recent census data in 1968, and does not introduce bias or other serious problems into analysis. Variations in response rate are more troublesome, ranging as they do from 52 to 88 percent among the fifteen white samples and from 60 to 94 percent among the fifteen black samples. We will later control for certain demographic variables, such as sex ratios, that might differ from city to city because of variations in response rates, and in Appendix A of this paper we deal explicitly with the effects of response rate variation on city differences in attitude levels. For a fuller description of decisions required in sampling, see Campbell and Schuman (1968, pp. 65–66).

[5] A brief discussion of city-suburb differences appears in Campbell and Schuman (1968, pp. 44–45).

3. Insofar as systematic variations in attitudes are associated with variance in either city size or regional location, we have presumably restricted the correlations we can obtain. Gary is the only small city included; there are no Deep South cities, and San Francisco alone represents the West. (Somewhat counterbalancing this restriction in variance was our deliberate expansion of the basic city sample to include Gary because of its Negro mayor and two more medium-sized cities, Cincinnati and Newark, largely because they had major riots.) Overall, our belief is that a more representative sample of, say, all American cities over 50,000 in size, would result in more variance being attributed to "City" as a variable. In other words, the results presented here are probably on the conservative side from the standpoint of indicating the usefulness of City as an explanatory variable.

THE ATTITUDES STUDIED

Since our aim is to explore the effects of City broadly, we have included in this analysis a wide range of the questions asked in our original seventy-five-minute interviews. Some of these items are built into composite indices, while others that cannot usefully be combined remain as separate items. (The effects of item unreliability will be noted later.) Sixteen indices and items were asked in exactly the same or very similar form to both black and white samples.

Tables 1 and 2 provide brief descriptions of all variables used in the analysis—table 1 for the black sample and table 2 for the white sample.[6] The variables do not relate solely to racial issues; at least one personality variable ("efficacy") is available for both samples, and a "personal-values" variable is available for the white sample. For brevity, we frequently refer to all these variables as "attitudes," but in fact several involve reports of experience and others are better characterized as beliefs or values.

PROBLEMS AND RESULTS

The General Relation of City to Attitudes

To our first question—how effective generally is City as an explanatory variable?—one answer is that, on the average, City accounts for a proportion of variance over our set of attitudes that is both statistically significant and comparable in size to that accounted for by standard "background" variables.

Table 1, column (1), shows for each of the attitude variables in the black sample the proportion of total variance accounted for by respondents' city of residence. The measure is a simple ratio—sum of squares between cities as a percentage of total sum of squares—and variables are

[6] These descriptions are generally paraphrases in the direction of one response category. A copy of the exact questions used can be obtained from the authors.

TABLE 1

COMPARISON OF CITY AND INDIVIDUAL ATTRIBUTE EFFECTS ON ATTITUDES FOR BLACK SAMPLE*

Var. No.	Variable Description	(1) % of Variance Explained by City	(2) % of Variance Explained by 5 Individual Attributes	(3) Total Variance Explained by City and Individual Attributes	(4) Net Variance Explained by City after Removing Individual Attributes (3)—(2)	(5) Net Variance Explained by Individual Attributes after Removing City (3)—(1)	(6) Variance Explained Jointly by City and Individual Variables [3—(4+5)]	(7) Ratio of Net City Effects to Net Individual Effects (4)/(5)
45.	Believes mayor is *not* trying hard to solve city problems (1)†	17 2%	2 4%	18 4%	16 0%	1 2%	1 2%	13 3
118.	Lives in racially mixed neighborhood (1)†	7 3	3 8	10 8	7 0	3 5	0 3	2.0
390.	Believes there is much housing discrimination in city (2)†	5 3	2 5	7 9	5 4	2 6	−0 1	2 1
44.	Believes city officials discriminate against Negro requests (1)	5 0	1 5	6 3	4 8	1 3	0 2	3 7
47.	Believes federal government is *not* trying hard to solve city problems (1)†	4.1	1 6	5 5	3 9	1 4	0 2	2.8
370.	Dissatisfied with neighborhood services (5)†	3 8	3 4	7 1	3 7	3 3	0 1	1 1
127	Believes whites want to keep Negroes down (1)	3 7	3 6	7 1	3 5	3.4	0.2	1.0
80	Denies improvement occurred for Negroes over past decade (1)	3 6	1 4	4 9	3 5	1.3	0.1	2.7

* "City" indicates present city of residence "Individual Attributes" refer to the multiple effects of 5 individual attributes age, sex, education, occupation, and family income Permanent project variable numbers are used for identification in later references to this table The numbers in parentheses following each variable description indicate the number of items used to measure the variable These results are based on N's ranging from 2,500 to 2,800, depending on the amount of missing data for a particular run.

† These variables are also included in the white sample (see table 2) in the same or very similar form and can therefore be compared across races

Var. No	Variable Description	(1) % of Variance Explained by City	(2) % of Variance Explained by 5 Individual Attributes	(3) Total Variance Explained by City and Individual Attributes	(4) Net Variance Explained by City after Removing Individual Attributes (3)—(2)	(5) Net Variance Explained by Individual Attributes after Removing City (3)—(1)	(6) Variance Explained Jointly by City and Individual Variables [3—(4+5)]	(7) Ratio of Net City Effects to Net Individual Effects (4)/(5)
89	Believes city government discriminates in employment (1)	3.5%	2.5%	6.0%	3.5%	2.5%	0.0%	1.4
42	City officials do *not* respond to complaints about city services (1)†	3.4	2.5	5.8	3.3	2.4	0.1	1.4
450	Dissatisfied with own income and/or housing (2)†	3.3	8.3	10.9	2.6	7.6	0.7	0.3
380	Believes there is police abuse (3)†	3.3	4.7	7.9	3.2	4.7	0.0	0.7
128	Believes city whites dislike Negroes (1)†	3.3	1.8	5.0	3.2	1.7	0.1	1.9
388	Believes there is much job discrimination in city (2)†	2.4	3.7	6.1	2.4	3.7	0.0	0.6
381	Has experienced police abuse (3)†	2.3	11.6	14.2	2.6	11.9	−0.3	0.2
71	Riots were a black protest, not simply looting (1)†	2.2	2.1	4.1	2.0	1.9	0.2	1.1
65	Believes city judges are harder on blacks than whites (1)	2.2	1.8	3.9	2.1	1.7	0.1	1.2
452	Has experienced job discrimination (2)	2.0	8.2	10.4	2.2	8.4	−0.2	0.3
394	Favors black rule of black institutions (3)	2.0	3.5	5.4	1.9	3.4	0.1	0.6
294	Favors police action as best way to prevent riots (open quest.) (1)†	1.7	2.6	3.9	1.3	2.2	0.4	0.6

TABLE 1—*Continued*

Var. No.	Variable Description	(1) % of Variance Explained by City	(2) % of Variance Explained by 5 Individual Attributes	(3) Total Variance Explained by City and Individual Attributes	(4) Net Variance Explained by City after Removing Individual Attributes (3)−(2)	(5) Net Variance Explained by Individual Attributes after Removing City (3)−(1)	(6) Variance Explained Jointly by City and Individual Variables [3−(4+5)]	(7) Ratio of Net City Effects to Net Individual Effects (4)/(5)
383....	Dissatisfied by treatment in neighborhood stores (3)†	1.7%	1.6%	3.2%	1.6%	1.5%	0.1%	1.1
419. ..	Shows high personal efficacy (4)†	1.6	11.2	12.5	1.3	10.9	0.3	0.1
121. ..	Has no white friends (1)†	1.6	9.0	10.8	1.8	9.2	−0.2	0.2
395.	Believes Negro children should learn an African language in school (1)	1.6	2.2	3.6	1.4	2.0	0.2	0.7
378...	Oriented toward use of violence (4)	1.4	8.9	10.4	1.5	9.0	−0.1	0.2
70. .	Believes Negroes are treated impolitely in downtown stores (1)	1.4	2.3	3.6	1.3	2.2	0.1	0.6
397...	Prefers association with blacks only (3)	1.3	3.4	5.0	1.6	3.7	−0.3	0.4
110...	Reports participation in a past riot (1)	0.8	4.1	4.8	0.7	4.0	0.1	0.2
391....	Reports participation in nonviolent protests (2)	0.6	5.2	5.8	0.5	5.2	0.1	0.1
Median for all 29 variables		2.3	3.4	6.0	2.4	3.3	0.1	0.6
Mean for all 29 variables		3.2	4.2	7.3	3.1	4.1	0.1	1.5
Median for 16 comparable (†) vars.		3.3	3.0	7.5	2.9	3.0	0.1	1.1
Mean for 16 comparable (†) vars.		4.0	4.6	8.4	3.8	4.4	0.2	1.8

TABLE 2

COMPARISON OF CITY AND INDIVIDUAL EFFECTS ON ATTITUDES FOR WHITE SAMPLE*

Var. No.	Variable Description	(1) % of Variance Explained by City	(2) % of Variance Explained by 5 Individual Attributes	(3) Total Variance Explained by City and Individual Attributes	(4) Net Variance Explained by City after Removing Individual Attributes (3)−(2)	(5) Net Variance Explained by Individual Attributes after Removing City (3)−(1)	(6) Variance Explained Jointly by City and Individual Variables [3−(4+5)]	(7) Ratio of Net City Effects to Net Individual Effects (4)/(5)
495....	Lives in racially mixed neighborhood (1)†	10.9%	2.7%	13.1%	10.4%	2.2%	0.5%	4.7
753....	Dissatisfied with neighborhood services (5)†	7.7	3.4	11.1	7.7	3.4	0.0	2.3
444...	Believes mayor is *not* trying hard to solve city problems (1)†	6.0	3.3	9.3	6.0	3.3	0.0	1.8
799....	Sympathetic with black protest (4)	4.6	17.6	20.3	2.7	15.7	1.9	0.2
720...	Favors interracial contact	4.5	7.7	10.7	3.0	6.2	1.5	0.5
488...	Believes there is much job discrimination in city (1)†	4.2	8.1	11.8	3.7	7.6	0.5	0.5
761...	Believes there is police abuse (3)†	4.2	6.7	10.5	3.8	6.3	0.4	0.6
492....	Believes there is much housing discrimination in city (1)†	3.9	4.4	8.1	3.7	4.2	0.2	0.9
723...	Favors federal aid to cities (4)	3.8	7.1	11.1	4.0	7.3	−0.2	0.5

* "City" indicates present city of residence. "Individual Attributes" refer to the multiple effects of 5 individual attributes age, sex, education, occupation, and family income. Permanent project variable numbers are used for identification in later references to this table. The numbers in parentheses following each variable description indicate the number of items used to measure the variable. These results are based on N's ranging from 2,350 to 2,585, depending on the amount of missing data for a particular run.

† These variables are also included in the black sample (see table 1) in the same or very similar form.

TABLE 2—*Continued*

Var. No.	Variable Description	(1) % of Variance Explained by City	(2) % of Variance Explained by 5 Individual Attributes	(3) Total Variance Explained by City and Individual Attributes	(4) Net Variance Explained by City after Removing Individual Attributes (3)−(2)	(5) Net Variance Explained by Individual Attributes after Removing City (3)−(1)	(6) Variance Explained Jointly by City and Individual Variables [3−(4+5)]	(7) Ratio of Net City Effects to Net Individual Effects (4)/(5)
664	Favors police action as best way to prevent riots (open quest.) (1)†	3.8%	4.8%	8.3%	3.5%	4.5%	0.3%	0.8
442	Believes city officials do *not* respond to complaints about services (1)†	2.6	5.7	8.5	2.8	5.9	−0.2	0.5
506	Believes most whites dislike Negroes (1)†	2.4	2.8	4.9	2.1	2.5	0.3	0.8
446	Federal government is *not* trying hard to solve city problems (1)†	2.4	1.7	3.9	2.2	1.5	0.2	1.5
476	Riots were a black protest, not merely looting (1)†	2.3	7.9	9.6	1.7	7.3	0.6	0.2
673	Negroes are behind because of discrimination (1)	2.1	10.0	10.9	0.9	8.8	1.2	0.1
792	Takes conventional position on "personal values index" (3)	2.0	10.8	11.8	1.0	9.8	1.0	0.1
478	Improve Negro conditions is way to prevent riots (1)	2.0	4.3	5.6	1.3	3.6	0.7	0.4
797	Dissatisfied with own income and/or housing (2)†	1.7	7.9	9.2	1.3	7.5	0.4	0.2

TABLE 2—*Continued*

Var. No.	Variable Description	(1) % of Variance Explained by City	(2) % of Variance Explained by 5 Individual Attributes	(3) Total Variance Explained by City and Individual Attributes	(4) Net Variance Explained by City after Removing Individual Attributes (3)—(2)	(5) Net Variance Explained by Individual Attributes after Removing City (3)—(1)	(6) Variance Explained Jointly by City and Individual Variables [3—(4+5)]	(7) Ratio of Net City Effects to Net Individual Effects (4)/(5)
762. . .	Has experienced police abuse (3)†	1.6%	7.1%	8.5%	1.4%	6.9%	0.2%	0.2
499. . . .	Has no Negro friends (1)†	1.5	12.7	13.7	1.0	12.2	0.5	0.1
507. .	Believes most Negroes dislike whites (1)	1.4	2.0	3.0	1.0	1.6	0.4	0.6
498 . .	Has moved to get away from Negroes (1)	1.4	1.0	2.4	1.4	1.0	0.0	1.4
764. . . .	Dissatisfied with treatment in neighborhood stores (5)†	1.3	3.4	4.7	1.3	3.4	0.0	0.4
736 . .	Shows high personal efficacy (4)†	1.1	10.8	11.5	0.7	10.4	0.4	0.1
477. . .	Believes whites should counterriot against Negroes (1)	1.1	4.6	5.6	1.0	4.5	0.1	0.2
578. . . .	Family's income has become worse over last five years (1)	0.6	12.2	12.7	0.5	12.1	0.1	0.0
Median for all 26 variables		2.4	6.2	9.4	1.9	6.0	0.4	0.5
Mean for all 26 variables. . .		3.1	6.6	9.3	2.7	6.1	0.4	0.8
Median for 16 comparable(†) vars.		2.5	5.2	9.2	2.5	5.2	0.3	1.0
Mean for 16 comparable(†) vars.		3.6	5.8	9.2	3.3	5.6	0.3	1.0

ordered in terms of the size of this ratio.[7] Comparable figures for the white sample are reported in table 2. For all but three of the fifty-five variables examined in the two tables, City accounts for at least 1 percent of total variance. Given the large sizes of the black and white samples—the minimum for any question being 2,350—virtually all these associations are reliable in terms of conventional significance levels ($p < .01$).

Only in one case, however, do we "explain" a quite large proportion of variance in absolute terms; nearly one-sixth of the total variation in evaluations of mayors (variable 45, black sample) can be accounted for by knowing the city in which respondents live, a surprisingly large amount considering such obvious other sources of respondent variation as party preference, social class level, measurement error, and individual differences in the propensity to view city officials through rose-colored glasses or jaundiced eyes But most of the associations with which we will be concerned are considerably smaller, ranging from around 2 to 7 percent of variance explained, and this is the range where we must establish importance. We do so first by comparing the variance City accounts for with that accounted for in the same samples by the *combination* of age, sex, education, occupation, and family income (col. [2] of tables 1 and 2) The latter "Individual Attributes" often constitute the totality of major explanatory background variables in analysis of survey data, and provide a touchstone for what can be achieved by such variables with these data.[8]

[7] We refer to this usually as "percent variance explained," although strictly speaking, we are not using variances We have not adjusted our calculations for degrees of freedom lost as is done in variance calculations because sample sizes within categories are large enough to make the adjustment trivial. The primary effect of such an adjustment would be to make several of the smallest "variance explained" figures at the ends of tables 1 and 2 slightly more suspect in reliability.

[8] The percentages shown in col. (2) for the five variables combined are essentially equivalent to the squared multiple correlations between each attitude and the five Individual Attributes, except that use of multiple classification analysis eliminates assumptions of ordering and linearity here just as for the City variable. For a description of multiple classification analysis (MCA), see Andrews, Morgan, and Sonquist (1969). Our use of this approach to dummy variable regression, especially in the next section, has also been influenced by the discussion in Blau and Duncan (1967). We have employed computer programs devised at the Population Studies Center and at the Institute for Social Research, both at the University of Michigan. Several analyses were run on both programs with essentially identical results. We are grateful to Frank Andrews, Michael Coble, James Morgan, and John Sonquist, each of whom at some point provided advice on the use and interpretation of MCA.

Our use of MCA with background variables required collapsing them into a smaller number of categories. For the present analysis, age was reduced to six decade categories (16–19, 20–29, 30–39, 40–49, 50–59, 60–69); education to five categories for whites (0–8, 9–11, 12, 13–15, 16+) and four for Negroes (13–15 and 16+ combined because of smaller number of cases); occupation to six categories (unskilled, semiskilled, skilled and foremen, sales and clerical, professional and managerial, housewives and others); family income to five categories (under $5,000, $5,000–$6,999, $7,000–$9,999, $10,000+, N.A. and other). We refer to these five variables in this

A comparison of the proportions of variance explained by City and by *all* five of these Individual Attributes over all variables indicates that City approaches the five attributes in explanatory power in the black sample (table 1) and is nearly half as strong in the white sample (table 2). For certain variables, City is considerably stronger than the five Individual Attributes. Moreover, in one important sense tables 1 and 2 understate the variance accounted for by City. The samples on which these calculations are based have been weighted to represent the actual populations by race of the fifteen cities, and therefore the smaller cities are contributing only slightly to the effects shown in tables 1 and 2. For analytic purposes, however, we will shortly be interested in considering the fifteen cities as equal units, and an argument can be made that equal-sized weighting of cities constitutes a theoretically more relevant population. (From a practical standpoint also, it makes sense to weight smaller cities higher than their specific populations: they represent a larger stratum of such cities, whereas most large cities are already included in the present sample.) We have not calculated the variances in tables 1 and 2 on the assumption of exact equality in city sizes, but we have done so for our original unweighted black and white samples, which are approximately equal across the fifteen cities and have the additional advantage of avoiding possible artifacts due to weighting. The results of these calculations raise the average (both mean and median) variance accounted for by City and reduce the average variance accounted for by the five Individual Attributes. Summary figures for our unweighted samples are shown in table 3 (p. 227). Under the assumption of approximately equal City size, City actually accounts for more variance than Individual Attributes in the black sample and for more than half as much variance in the white sample.[9]

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form as "Individual Attributes." The collapsing of categories reduces somewhat the variance the five variables can account for, but the elimination of the assumption of linearity has the opposite effect. Several test runs using multiple regression with finer categories produced less variance explained than by the MCA approach.

Here, as elsewhere, we necessarily treat the attitude variables as approximating interval scales. We reviewed each such variable and eliminated categories with tiny frequencies, except where they seemed justified in terms of their assigned scale value. Since our sample is quite large and most of our analysis is comparative rather than being concerned with absolute values, we believe that problems of distribution shape and scale adequacy do not seriously influence conclusions drawn here.

[9] Although these conclusions are based on an additive model, there is little evidence of a gain in variance accounted for by allowing interaction among the five Individual Attributes. We reduced the five variables to fewer categories each, then combined them into a single forty-eight-category interaction variable (where, for example, one category included all 19–39-year-old males with less than twelfth-grade education, less than $8,000 income, and a blue-collar job). This interaction variable was then used against all the comparable (†) variables in tables 1 and 2 in a series of analysis-of-variance runs. There were no large changes in gross variance accounted for, and

The preceding comparison requires an obvious qualification. The relationship between two variables must be patterned and interpretable in order to be of theoretical importance. An example of how "small" explained variance in this study can correctly seem meaningful is shown in figure 1 (p. 28), where mean scores on the Experienced Police Abuse Index (variable 381) are plotted against age for the black sample (weighted). Although age accounts for only 3.2 percent of the variance in the Experienced Police Abuse Index—a lower amount than City explains for twenty-three of the fifty-five variables presented in tables 1 and 2—the graph indicates a simple, interpretable, and important relation between the two variables. Thus a relatively small amount of variance explained can point to substantively significant findings. The lack of an intrinsic ordering makes such a demonstration more difficult for City, but the rest of this paper will attempt to indicate its substantive importance.[10]

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almost as many of the changes that did occur were decreases rather than increases, presumably because of the loss of fineness in categories. Perhaps an extended analysis could uncover some interesting interaction effects among these five individual variables, but clearly no dramatic increase in variance explained should be expected

[10] The reasons why City, age, and other standard background variables seldom account for a large absolute amount of variance cannot be explored here, but one point should be noted. There is undoubtedly a good deal of random error in our measures of all the attitudes presented in tables 1 and 2. Even where we have indices based on several items, reliability estimates do not reach above 0.70. In cases where only one or two items are used to represent an attitude, probably half or more of the total variance is a result of random error (misunderstanding of questions, miscoding, etc) If we assume that almost all of the "explained variance" is free of random error, then most of the percentages in table 1 could be doubled.

Since reliability is heavily influenced by the number of items in an index, a convenient way of approximating the effects of reliability on variance explained is simply to group variables in terms of the number of items that compose them. When this is done for all the variables in tables 1 and 2, the following are the averages of the total variance explained (col. [3] of tables 1 and 2) for indices of different lengths:

Black Sample (Table 1)		White Sample (Table 2)	
Number of Items in Index	Mean Total Variance Explained by City and Individual Attributes	Number of Items in Index	Mean Total Variance Explained by City and Individual Attributes
1 (16 indices)	6 5%	1 (16 indices)	8 2%
2–3 (10 indices)	7 7	2–3 (4 indices)	10 0
4–5 (3 indices)	10 0	4–5 (6 indices)	11 6

The trend in both samples is for predictors to explain more variance where the dependent variables are measured by more items, undoubtedly because of increased reliability. In addition to problems of unreliability, it must also be kept in mind that "variance explained" is always a function of the specific population under study and that by changing aspects of that population—including the variances either of the variables under consideration or of others affecting the dependent variable—one can

The Overlap between City Effects and Individual Attribute Effects

We have shown that City accounts for sufficient variance in a number of individual attitudes to be worth serious consideration. But it is possible that these effects largely overlap with, and merely reflect, such standard background variables as age and education. If, for example, the fifteen cities vary in age composition, and if age in turn is a cause of experience with police abuse, then the variance explained by City may largely duplicate that explained by age. City might then be conceptualized as an antecedent part of a causal chain involving age (for example, the economic character of cities attracting particular age groups, which in turn report different levels of police abuse). To test for statistical overlap we

TABLE 3
PERCENTAGE OF VARIANCE EXPLAINED BY CITY AND INDIVIDUAL VARIABLES (UNWEIGHTED DATA)

	% of Variance Explained by City	% of Variance Explained by 5 Individual Attributes
Median for 29 variables for black sample	3 0	2 2
Mean for 29 variables for black sample	3 9	3 5
Median for 26 variables for white sample	3 1	4 9
Mean for 26 variables for for white sample	3 7	6 2

carried out a two-step multiple classification analysis (MCA), in which the five Individual Attributes were included at both steps, but City was included at only one step. The analysis breaks up the total variance shown in column (3) in tables 1 and 2 and apportions it to three sources: variance accounted for only by City (col. [4]), variance accounted for only by Individual Attributes (col. [5]), and variance accounted for jointly by City and Individual Attributes (col. [6]).[11]

substantially change the variance explained by a given set of independent variables. For another but equally skeptical perspective on absolute proportions of variance explained, see Blau and Duncan (1967, pp. 174–75). In the present paper our emphasis is on relative, not absolute, sizes of explained variance, although we cannot wholly escape the problems noted here.

[11] We first obtained the total variance accounted for in each attitude by the additive combination of *all* five Individual Attributes as predictors in a multiple classification analysis (MCA). We then re-ran the MCA with City included as a sixth predictor variable. The nature of the calculations can most quickly be described by using a

Our major finding is that overlap between City and Individual Attribute effects is negligible for almost all attitudes. In the black sample the median overlap is 0.1 percent, there are only two cases greater than 0.4 percent, and there are several instances of negative overlap. For the white sample (table 2), overlap is slightly greater (the median equals 0.4 percent), but it is almost always much smaller than either of the net effects. These results indicate clearly that City and Individual Attributes,
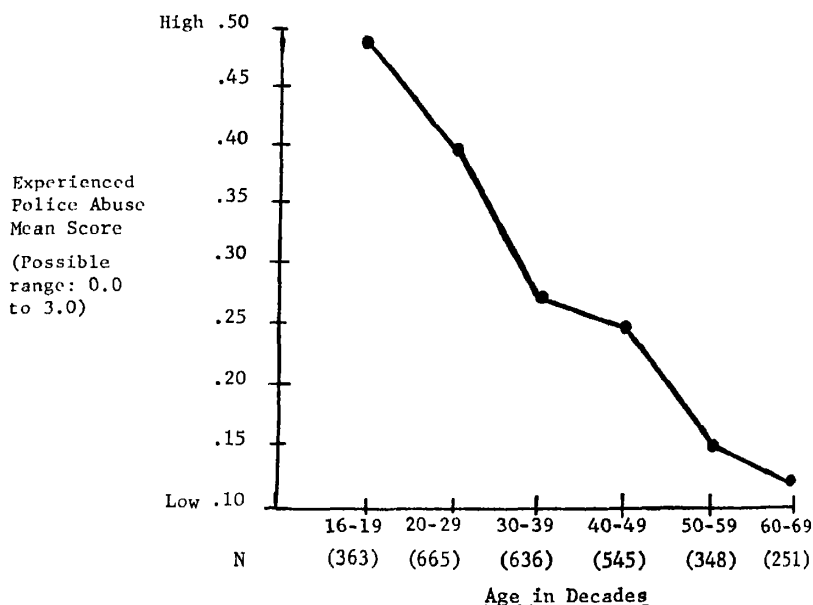
FIG. 1.—The relationship between Police Abuse Index and age

particular dependent variable as an example. The first row, col. (3), of table 1 gives the result from the MCA which included all *six* predictors (age, sex, education, occupation, income, and City) with the "Mayor" item (variable 45) as the dependent variable. The total variance accounted for by all six predictors together is 18.4 percent. Col. (4) shows the portion of this 18.4 percent that is contributed by City over and above that produced by the five Individual Attributes taken together. This "net City effect," 16.0 percent in the case of the Mayor item, is obtained by subtracting the total variance explained in the first MCA (using the five attributes) from the total variance explained in the second MCA (using the five attributes plus City).

The "net Individual Attribute effect" (col. [5])—the effect of the combined five attributes over and above City effects—is obtained by subtracting the City effect found through simple analysis of variance (col. [1]) from the total variance explained by all six variables in the second MCA run (col. [3]). For the Mayor variable, the five Individual Attributes explain only 1.2 percent of its variance over and above the 16.0 percent already explained by City when the latter is allowed to operate freely. Finally, the difference between the total variance explained by all six variables (col. [3]) and the sum of the net effect of City (col. [4]) and of Individual Attributes (col. [5]) gives the figure for the joint effects or "overlap" in col. (6)—only 1.2 percent for this example.

as defined here, constitute essentially independent sources of explanation for response variation in the two samples. More to the point, knowledge of an individual's city of residence provides information not tapped by individual background variables on these respondents.[12]

Types of Variables Explained by City and by Individual Attributes

Although City and Individual Attributes are largely independent predictors, it would be quite possible for them to explain the same variables equally well. This is the case, for example, for "Believes whites want to keep Negroes down" (variable 127) in the black sample, where 3.7 percent of the variance is accounted for by City, 3.6 percent by the five Individual Attributes, and as usual there is little overlap (0.2 percent). But the more typical case is one like "Mayor not trying," where City is by far the more powerful predictor; or the "Personal Efficacy" variable, where most of the explained variance is due to Individual Attributes. Column (7) of tables 1 and 2 gives the ratio of "net City effects" to "net Individual Attribute effects." The greater the departure from 1.0, the more either City *or* Individual Attributes is important. The trend is not unequivocal, but there is some tendency for attitudes to be more readily explained either by City or by Individual Attributes, but not by both. The trend is stronger when unweighted samples are used, as described earlier.

The fact that City explains some attitudes well and Individual Attributes explain other attitudes well prevents one from too quickly assuming that a single low relationship is simply a result of measurement

[12] The lack of more than minor overlap between City and the Individual Attributes suggests that the two types of predictors are not highly associated. Concretely, this means that the fifteen cities do not vary greatly in composition by age, sex, education, occupation, or family income. Analysis of variance, using City as the independent variable and each of the Individual Attributes in turn as dependent variables, produces the following results:

	% Variance Accounted for	
	Black Sample	White Sample
Age	0 7%	0 7%
Sex	1 3	1 1
Education	2 9	5 2
Occupation	3 4	2.3
Income	3 4	2 2

Given the relatively low error with which these variables are measured, none of the effects can be considered very large. City variations in composition are greater for whites than blacks, with the major variations for both races involving social class, rather than age or sex. Examination of the MCA β's for the only attitudes that show much overlap—white attitudes toward Negroes—also indicates education to be the major source of overlap.

error or other artifacts. When we first saw that "Experienced Police Abuse" (variable 381) by Negroes had only 2.3 percent of its variance explained by City, we were inclined to believe that the index was unreliable or was difficult to work with because of the relatively small proportion of respondents reporting abuse. The finding that 11.6 percent of the variance in the index can be explained by Individual Attributes suggests that the level of police abuse varies much less among the fifteen cities than it does within a city on the basis of age, sex, and social class. On the other hand, "Dissatisfactions with Neighborhood Services" (variables 370, 753), which might have been assumed to be mostly a function of the social class of respondents' neighborhoods, turns out to vary more between cities than within them. Of course, here as elsewhere we must keep in mind the fact that our analysis eliminates one important source of within-city variance, namely, that due to race itself. By treating the black and white samples separately in this report, we control for the effects of race, eliminating it as a source of variance either between or within cities.[13]

Leaving aside isolated examples, can we say anything general about the *type* of variable that City is particularly useful in explaining? There do not seem to be any criteria that distinguish perfectly between those dependent variables best explained by City and those best explained by Individual Attributes, but two extremes do stand out clearly. Questions that deal directly with evaluations of city officials or city services tend to have high variance accounted for by City. Questions that measure personal preferences or personality characteristics tend to be much better explained by Individual Attributes. The Mayor item typifies the former case, and most of the other questions dealing with city officials show the same pattern. The Efficacy Index (variables 419, 736) shows just the opposite configuration: it is largely a matter of Individual Attributes in both samples, with relatively little variance explained by City. This finding is not very remarkable, but it is nonetheless important: one discovers greatest City effects where there are apt to be real city differences; where there is little reason to expect City to be relevant, it usually is not.

Another way of looking at this differentiation is that City is most useful in explaining those variables that are largely cognitive in nature, their content being the perceptions and beliefs that individuals have about their cities. Such variables are thus measures of how the urban social world looks to people, whether in fact it "really" is that way or not. On the other hand, values, hypothetical actions (for example, variable 378,

[13] Comparisons between black and white scores are reported in Campbell and Schuman (1968, esp. chap. 4). Some comparisons are also reported or can readily be calculated from data presented below.

Violence Orientation), and even specific individual experiences with discrimination all tend to be related more to Individual Attributes. City is therefore an indicator of the urban context in which respondents see themselves as acting, while Individual Attributes appear to measure personal traits and acts.

If the variables best explained by City are measures of real social facts, then the kinds of variables explained well by City for Negroes should also be explained well by City for whites, and vice versa. Although the *content* of black and white perceptions may differ—for example, mayors popular with one race may be unpopular with the other—the basic psychological process should be much the same in the sense that perceptions of the mayor and of other urban characteristics should be more a function of City than of Individual Attributes for both races. A general measure of such racial similarity is the correlation across the set of sixteen variables available for both races between amount of variance explained for blacks and amount of variance explained for whites. The rank-order correlation (ρ) between races is .70 for net variance explained by City and .72 for net variance explained by Individual Attributes. These findings provide evidence that City and Individual Attributes tend to be related to dependent variables by much the same process for both races.

The Ordering of Cities on Attitude Variables: A Racial Comparison

The substantial rank-order correlations just reported do not imply that the cities are *ordered* in the same way on a particular variable for blacks and whites. City can explain a large amount of variance in attitudes toward the Mayor for both races, but the reasons and the city orderings can be the same, opposite, or uncorrelated for the two races. Although we would expect blacks and whites living in each city to agree on some urban questions, it is easier to imagine their disagreeing. For one thing, de facto segregation creates racially distinct neighborhoods, leading to different experiences with many city services. Second, Negroes must contend with widespread discrimination and prejudice. Finally, black and white citizens have different expectations about public officials and different perspectives on such urban events as riots.

We turn now to these and related issues that focus on the actual cities sampled. We begin by assigning to each city the mean score obtained by each of its racial samples on an attitude variable.[14] We then present in

[14] Gross means rather than net values have been used in these calculations. For the black sample the difference is trivial between the two types of values, but some of the differences for the white sample are slightly more important. However, several trials with adjusted means (one of which is reported below) produced no substantively important change in results. Distances between cities tend to shrink slightly when

table 4 the product-moment correlation between the black and white samples across the fifteen cities for each of the sixteen variables available on both races.

Several cautions are in order. First, we cannot provide straightforward criteria for assessing the reliability of these coefficients. If we ask the question, how likely it is one would obtain similar correlations in drawing new samples of 200 from these *same* fifteen cities, the answer would seem to be "quite likely," since each pair of means is based on a rather large sample. If we view the fifteen cities themselves as a sample from a larger universe of cities, then additional sampling error must be assumed. Thus, for different purposes, different assumptions are in order. For the present, we must necessarily treat these and later correlations between city means as primarily exploratory.

A more troublesome practical problem arises from the use of only fifteen cases, even if we assume that our interest is indeed restricted to these particular cities, since correlation coefficients based on such a small number can easily be elevated by one or two extreme cases.[15] We have checked graphs of all the relationships discussed as important in the following pages and present a number of them, the relevant ones at this point being shown in figures 2–8. Graphing has an additional advantage here, since the points are particular cities and thus convey information of value about how the cities are ordered on each variable.

adjusted values are used, but the basic order and even relative differences remain the same.

[15] We experimented with rank-order correlations, but the ranking process often seemed to distort important information about real score distances between cities—sometimes trivial differences were increased by use of ranks, sometimes very large differences practically vanished. Where it is particularly relevant below, we will report both types of correlation, but our primary way of dealing with this problem is to use correlation coefficients only as convenient indices and to study graphically any that are high enough to be of interest. (Low product-moment correlations do not present the same problem: it will seldom be possible with fifteen cases to spot meaningful nonlinear relations that produce low Pearson coefficients.)

One other apparent problem is that the variables we use here differ in the extent to which they are related to City in the first place. It may seem strange to take a variable like "Efficacy," which has a small relation to City for each race separately, and ask whether cities are ordered similarly on it by the two races. However, as long as City accounts for some reliable variance for each race, it is possible for scores to be ordered in the same way by city. The variances in tables 1 and 2 are in this sense somewhat analogous to scale reliabilities: the correlation between two attitude scales is a function both of the reliability of each scale and of the underlying association between the constructs being measured. If the underlying association is strong, it can manifest itself even where the reliabilities are low (though not if they are zero); but the higher the reliabilities, the more likely a relation will appear. In keeping with these points, we find that the four variables with the strongest relations to City (averaging over 4 percent variance explained by City for both races) provide four of the largest between-race correlations, but that two other relatively high correlations (r greater than .40) occur where the variance explained by City is less than 3 percent.

TABLE 4

CORRELATIONS BETWEEN BLACK AND WHITE CITY MEANS ON COMPARABLE VARIABLES

Var. No. Black	Var. No. White	Variable Description	% of Variance Explained by City in Black Sample	% of Variance Explained by City in White Sample	Average % of Variance Explained by City for Both Samples	Product-Moment Correlation between Black and White City Means
370	753	Dissatisfied with neighborhood services	3.8	7 7	5.8	.61
118	495	Lives in racially mixed neighborhood	7 3	10 9	9 1	.60
390	492	Believes there is much housing discrimination	5.3	3 9	4.6	.60
450	797	Dissatisfied with own income or housing	3 3	1 7	2 5	.53
381	762	Has personally experienced police abuse	2 3	1.6	2.0	.46
45	444	Mayor is not trying hard to solve city city problems	17 2	6 0	11.6	43
294	664	Favors police action as best way to prevent riots	1 7	3 8	2 8	.37
388	488	Believes there is much job discrimination	2 4	4 2	3 3	36
419	736	Shows high personal efficacy	1 6	1 1	1.4	30
71	476	Riots were a black protest, not simply looting	2 2	2 3	2.2	22
128	506	Believes city whites dislike Negroes	3 3	2.4	2 8	.20
383	764	Dissatisfied with treatment by neighborhood stores	1 4	1 3	1 4	02
42	442	Believes city officials do *not* respond to complaints about services	3 4	2.6	3.0	.01
121	499	Has no white (Negro) friends	1.6	1.5	1 6	.01
380	761	Believes there is police abuse	3.3	4.2	3.8	−.13
47	446	Believes federal government is *not* trying hard to solve city problems	4.1	2.4	3 2	−.16
						.33*

One of the highest correlations between races is that for reports of neighborhood racial composition (fig. 2, $r = .60$). This finding is at once trivial and reassuring: cities in which blacks report living in mixed neighborhoods tend to be the same cities in which whites report living in mixed neighborhoods. Logically, this is one's general expectation, although certain factors—such as the ratio of blacks to whites in a given city—can throw off the correlation and are here probably keeping it from being higher. One of the largest inconsistencies between black and white reports is for Milwaukee, which has an unusually small black percentage of population. Milwaukee is about average among our cities in segregation according to the index presented by Taeuber and Taeuber (1965, p. 33), but with a very small black population (12.5 percent by our estimates for 1968), a much larger proportion of Negroes than of whites experience whatever integration occurs. Similar explanations are plausible for most of the other discrepancies in figure 2. (In addition, sampling error is especially high on this variable because of large cluster effects.)

Taking some confidence from the results for neighborhood racial composition, we are encouraged to treat seriously the highest correlation in table 4, that of .61 for the Dissatisfaction with Neighborhood Services index (graphed in fig. 3). Dissatisfaction with services provided by the city government (schools, parks, recreation, police protection, and sanitation) apparently cuts across racial lines to characterize cities as a whole While the level of dissatisfaction is greater in general among blacks, the gap between average black and average white dissatisfaction for the total samples ($2.18 - 1.86 = 0.32$) is much smaller than the difference between the extreme cities within either race. Looked at another way, *Negroes* in Baltimore, San Francisco, Washington, and Chicago are more satisfied with the neighborhood services provided by their city than are *whites* in Boston, Gary, and Pittsburgh. These extreme comparisons capitalize somewhat on sampling error, but the high positive correlation between black and white views of city services strongly suggests that these city differences in perception are real.[16]

The correlation between black and white samples when evaluating the mayor is moderately positive ($r = .43$), but figure 4 suggests a more complex relationship. The two cities with recently elected Negro mayors

[16] We must be careful not to infer that blacks and whites *within* cities agree in absolute scores; on the contrary, the exact coordinate locations (given in Appendix B) show that racial scores usually differ within cities. Despite the similarity in city *orderings* by race on mean Dissatisfaction with Neighborhood Services, for example, within each of the fifteen cities, black dissatisfaction is greater than white. Nor does a high positive correlation indicate that blacks and whites consciously tend to place their city in the same rank position vis-à-vis the other fourteen cities. Respondents neither were nor could have been asked such a question. Our interpretation of a high positive correlation is that it indicates that each city possesses a reality which affects all its inhabitants in much the same way, even though the levels of effects for blacks and whites differ across the sample as a whole.
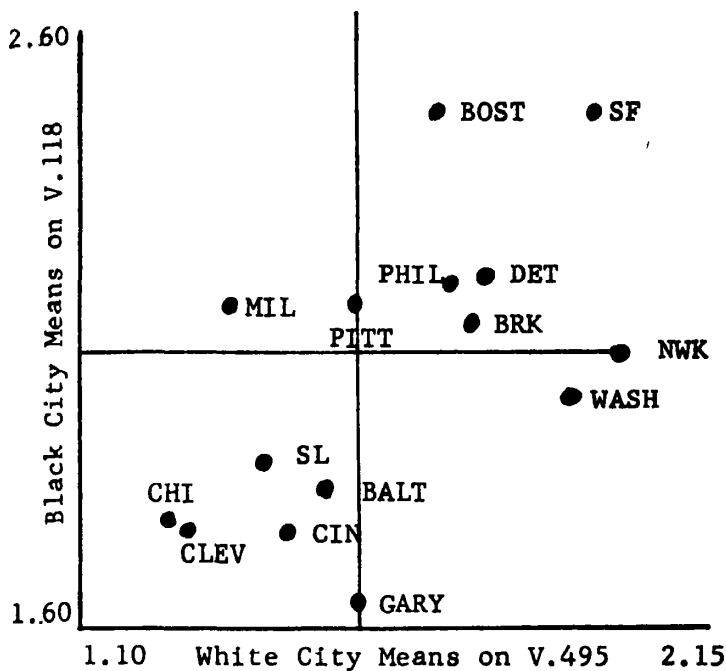
FIG. 2.—Correlation between races across fifteen cities: "Lives in a racially mixed neighborhood." For figs. 2–8, scores are city means for each race. See Appendix B for exact scores. Lines are drawn at the median score for each race on each index.
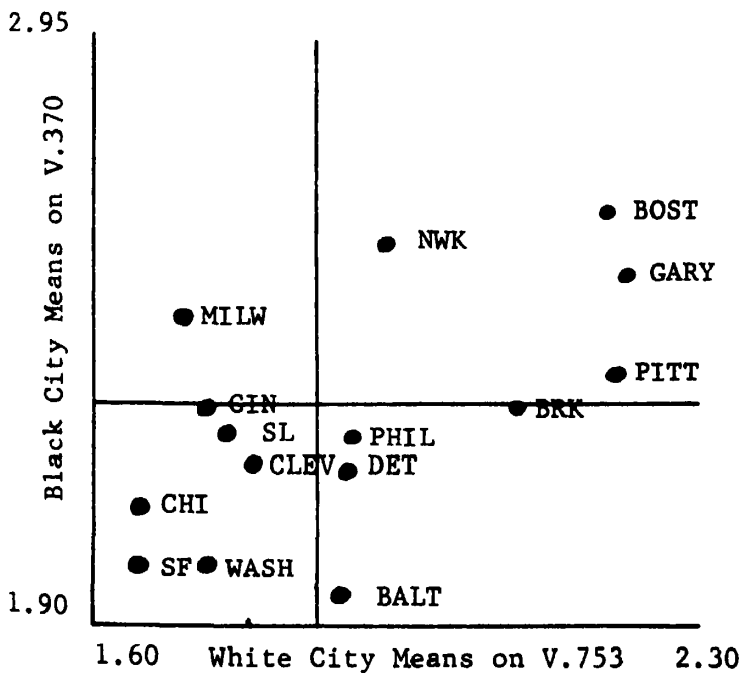
FIG. 3.—Correlation between races across fifteen cities: "Dissatisfaction with neighborhood services."

were clearly much in favor with their black respondents, receiving average scores (1.09 and 1.06) that are almost perfect in favorability (1.0). Four other black city samples also cluster on the satisfaction side, three of them having liberal white mayors and the fourth an appointed Negro mayor. Moreover, all four of these latter cities had favorable or at least relatively neutral white constituencies. At the other extreme, Newark had a mayor who managed to be relatively unpopular with both races.
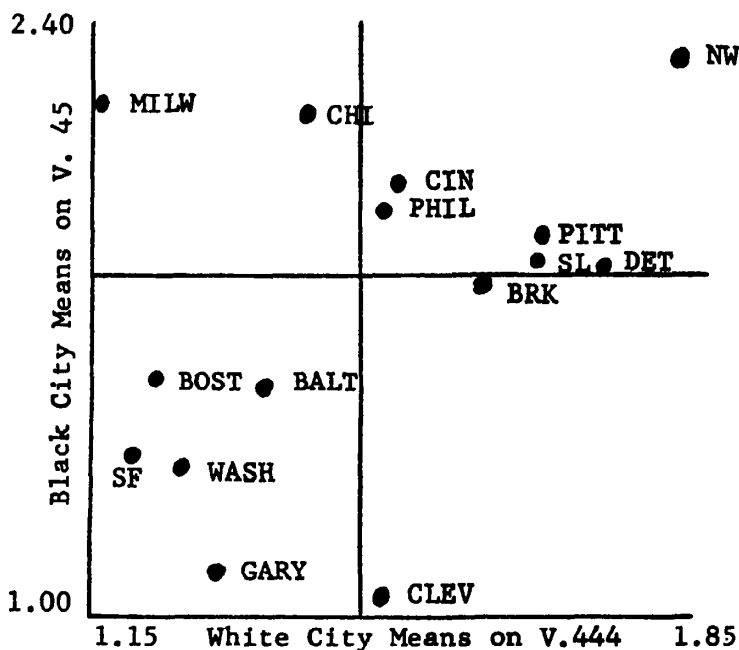
FIG. 4.—Correlation between races across fifteen cities: "Believes mayor is not trying hard to solve city problems."

If one now focuses on the other eight cities, however, we find that where the mayor is more popular with one race he is less so with the other (Milwaukee representing the extreme in this regard).

The three other variables showing correlations of .40 and above are presented in figures 5–7. The strong relation for Beliefs in Housing Discrimination ($r = .60$, fig. 5), with a moderate one also for Beliefs in Job Discrimination ($r = .36$, graph not shown), indicates fairly good agreement in an area of presumably very different salience and meaning to the two races. Some light will be thrown on these relations later when we examine their demographic correlates. Dissatisfaction with own Income and/or Housing shows a correlation of .53 between races (fig. 6), surprisingly high for a measure dealing with such individualized factors as
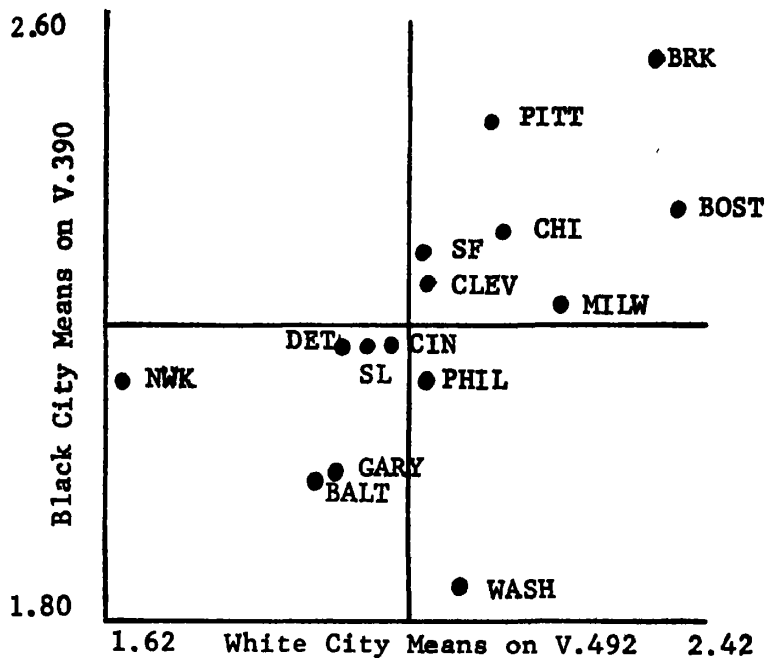
FIG. 5.—Correlation between races across fifteen cities: "Believes there is much housing discrimination in city."
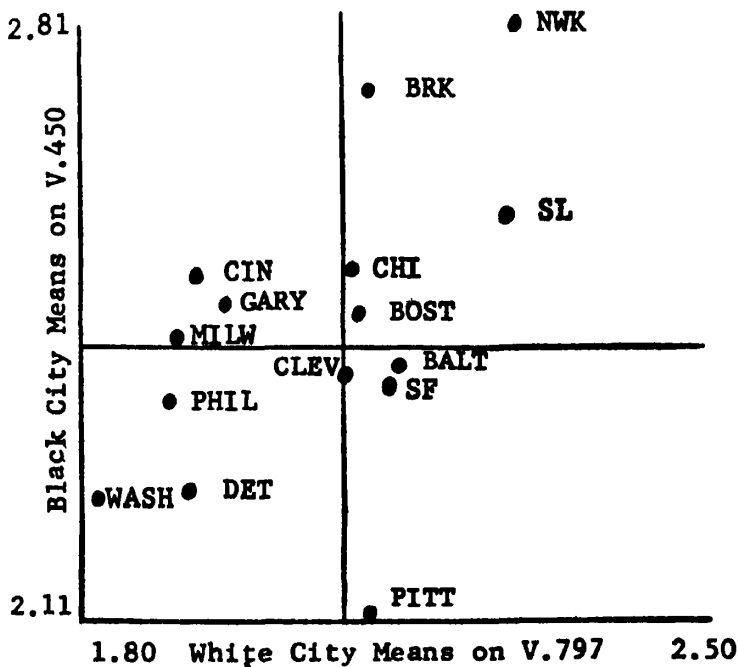
FIG. 6.—Correlation between races across fifteen cities: "Dissatisfied with own income and/or housing."

family income and housing. It is the housing component of the index that seems more likely to be associated with real city characteristics (age, density, city housing laws); in line with this, when the index is broken into its components, the black-white correlation across cities for the housing item is much higher than for the income item (.58 as against .23).

Perhaps the most interesting finding here is that Experienced Police Abuse (fig. 7) shows a fairly strong cross-race correlation of .46 (partly
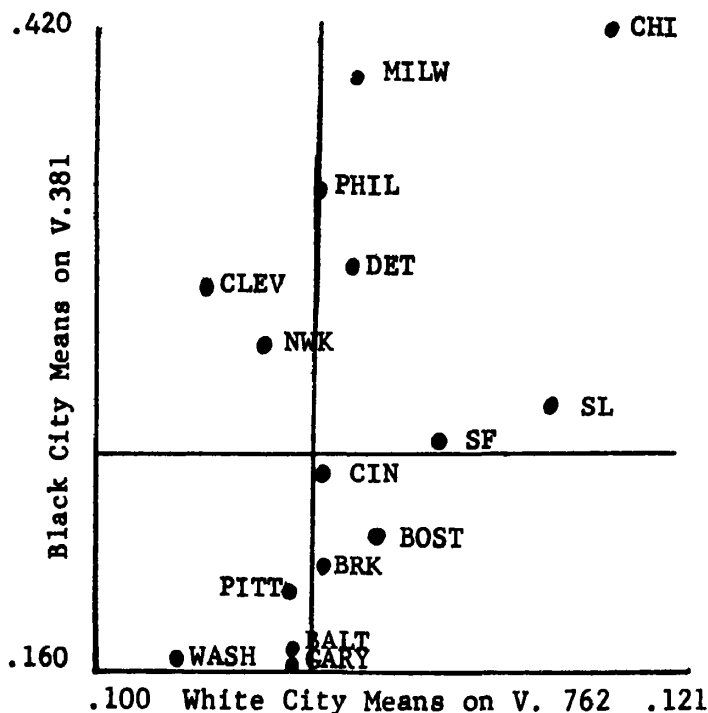
FIG. 7.—Correlation between races across fifteen cities: "Has experienced police abuse."

due to one extreme case, Chicago, where a very high degree of police abuse is reported by both races), indicating similarities in actual *experiences* across cities. Believes Police Abuse (fig. 8), however, has a small negative correlation of −.13, indicating that black and white city samples have, if anything, slightly opposite beliefs about the way the police operate. A plausible, if post factum, interpretation is that the reported experiences are more accurate orderings of actual police practices in these cities than are the general beliefs. The latter may draw on more publicized and polarized popular images, as indeed Newark seems to do (fig. 8). It is

interesting to note that another type of general belief about city officials, Believes City Officials Do Not Respond to Complaints about Services, also shows no correlation (.01) between races. The agreement between Negroes and whites seems to be greatest in personally experienced areas of life—racial mixture of neighborhood, quality of neighborhood services, personal experience with police—and somewhat less where global beliefs and judgments about city officials are involved, especially those subject
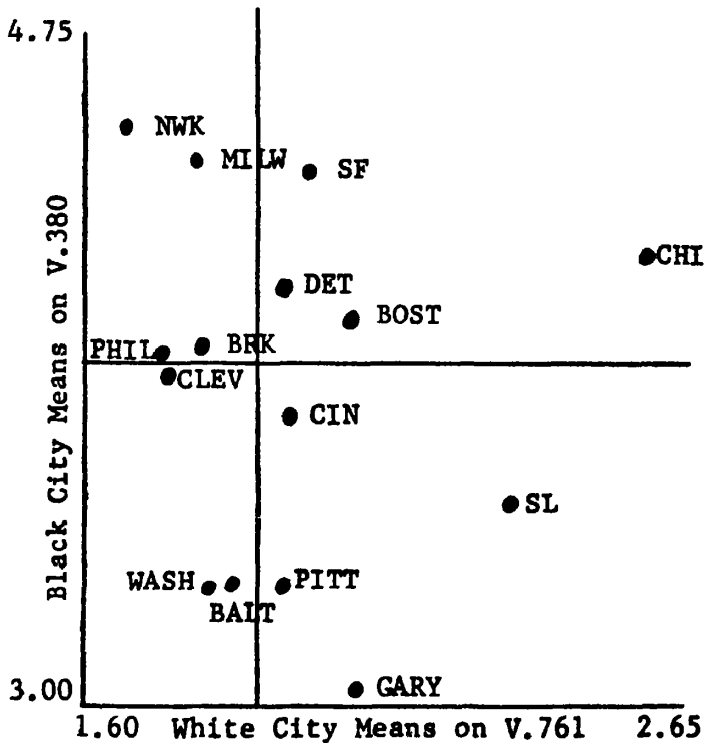
Fig. 8.—Correlation between races across fifteen cities: "Believes there is police abuse."

to ideological forces. The Mayor item provides a partial exception to this generalization, but then a successful mayor must manage somehow to appear tolerable to all major constituencies in his city.

Considering the sixteen comparable variables as a set, the median correlation is .33—clearly positive but also far from indicating a strong trend toward identical orderings by race. To obtain some basis for assessing the size of the coefficients reported in table 4, we can compare them with correlations obtained between other major social divisions within cities. We selected from table 4 four variables with different levels of correlation: high positive, low positive, zero, and negative. Using only

the white sample, mean scores were obtained for men and for women in each city, and for low family income (under $7,000 a year) and high family income ($7,000 and over) respondents in each city. Correlations across the fifteen cities were obtained between the sexes and between the income groups, with results shown in table 5. There are a number of points that might be pursued here, but if we restrict ourselves to a comparison with City, the most important result is that the correlations between races are consistently lower than those between sexes and between income groups. The comparison with income groups is perhaps more relevant, since income level, like race, tends to be an ecologically segregating factor and to create different economic interests. We must conclude that, although cities are similarly ordered by race to an important extent, race creates greater differences in perspective on these questions than does income or sex.

TABLE 5

CORRELATIONS BETWEEN RACES, SEXES, AND INCOME GROUPS

Variable Description	Correlations between Races	Correlations between Sexes	Correlations between Income Groups
Dissatisfied with neighborhood services. .	60	.91	90
Believes there is police abuse .	− 13	.42	73
Believes city officials do not respond	01	.86	.61
Shows high personal efficacy.	30	54	.47

Correlations between Variables for Each Race

Some further light can be thrown on city-level means by studying the intercorrelations among variables for each race separately. This will also provide suggestions for reducing the number of variables in preparation for an attempt to link our attitude measures to several demographic and other characteristics of the fifteen cities. Variables that are highly correlated can be treated as a cluster, while variables that are not related to others can be kept or dropped depending upon their conceptual importance. Special caution must be taken, however, not to infer intra-individual relationships from city-level correlations, except where the same relation can be shown to occur using individual scores as units of analysis. We will be drawing variables for this analysis from tables 1 and 2, whether or not they are available on both races.

Our first interest is in identifying a cluster of variables that concern

city officials, agencies, and services—a central topic of our questionnaire. Table 6 presents below the diagonal the intercorrelations across the fifteen black city samples among eight variables that seemed potential candidates for this cluster. For six of these eight variables, all intercorrelations except one are above .50 and the mean r is .64.[17] These six variables have in common belief content about broad city symbols, such as the mayor and the police; we will label this cluster of items "Dissatisfaction with City Government" and have built a composite index from them.[18] The two remaining items have much lower correlations with the larger cluster, perhaps because they are more experiential in nature (one concerns personal experiences with the police, the other dissatisfactions with city services at the neighborhood level). We have not included either in the index just described.

When we order the fifteen cities on the composite index, we obtain the list from most dissatisfaction (3.74) to least (0.66) shown in table 7. Rank on the "Mayor Not Trying" question, one of the six included in the cluster index, is also presented in the table. The single variable and the composite of six lead to similar orderings, especially at the extremes, suggesting that the level of confidence in the mayor of a city may constitute a useful indicator of the more general level of trust by Negroes in the rest of the city administration. This element of trust or confidence must be at least partly racial in content. Three of the six variables in the "Dissatisfaction with City Government" cluster deal directly with racial discrimination and one other (Believes Police Abuse) no doubt has racial connotations for many respondents. This interpretation also is congruent with the fact that the two cities with the highest levels of dissatisfaction involve mayors probably perceived in 1968 as more representative of whites than of blacks, while three of the four cities at the other extreme had Negro mayors in 1968.[19]

[17] These intercorrelations at the city level are supported by low but consistently positive and significant correlations at the individual level.

[18] Each city mean on each of the six variables was transformed into a standard score (deviation from the mean of the fifteen means and division by the standard deviation of the fifteen means). These scores were averaged and a constant of 2 added to eliminate negative numbers. The index is at the city, not individual, level, and we will use it only as a convenient summary after looking separately at the components of the cluster.

[19] The white sample results, shown above the diagonal in table 6, do not reveal the same pattern of intercorrelations at the city level. For example, there is no relationship for whites between city means for "Mayor Not Trying" and either "Believe Police Abuse" ($r = -.06$) or "Experienced Police Abuse" ($r = -.01$), although the relationship between the latter two measures is even stronger for the white than for the black city samples (.85 as against .70). Relationships at the individual level for whites, however, are similar to those for blacks for all three variables. Further exploration of this difference between white city and individual relations will not be undertaken here, since our main focus is on the black cluster where the two levels of analysis produce the same results.

TABLE 6

INTERCORRELATIONS AMONG VARIABLES CONCERNED WITH CITY OFFICIALS AND SERVICES*

Black Var. No.	Variable Description	Mayor	Believe Police Abuse	Neighbor-hood Services	Officials Not Respond	Exper. Police Abuse	City Discrim. Jobs	City Judges Discrim.	Officials Discrim.
45	Mayor not trying hard	.	−.06	.19	40	− 01	†	†	†
380	Believes police abuse	52		− 16	28	85	†	†	†
370	Dissatisfied with neighborhood services	26	18	.	39	31	†	†	†
42	Officials do not respond	60	73	56	...	40	†	†	†
381	Experienced police abuse	56	70	03	50	..	†	†	†
89	City discriminates in jobs	73	.62	27	68	43	..	†	†
65	City judges discriminate	62	.43	39	58	30	.80	..	†
44	Officials discriminate against Negro requests	83	55	33	.67	54	.74	.51	...

* Black sample figures are below the diagonal; white sample figures are above the diagonal. Variable numbers are keyed to table 1, see that table for fuller verbal description of variables.

† One or both variables not available for white sample.

There are no other clusters of variables in the black sample where it appears advantageous to conceptualize larger sets on the basis of high intercorrelations, although isolated pairs of variables do relate strongly across cities (for example, "Violence Orientation" and "Riots as Protests, Not Looting," .84). In the white sample, however, three variables, two of which are already more complex indices, relate very highly to one another: variable 799, Sympathetic with Black Protest (four items); variable 720, Favors Interracial Contact (four items); and variable 673, Negroes Are Behind Because of Discrimination (one item). Across cities the intercorrelations among these three variables range from .83 to .89, and

TABLE 7

CITY SCORES ON DISSATISFACTION WITH CITY GOVERNMENT CLUSTER*

City	"Dissatisfaction with City Government" Cluster Scores (Black)	Rank on Mayor Not Trying Question (Black)
Milwaukee	3.74	2
Newark	3 28	1
Chicago	2.75	3
Cincinnati	2.61	4
Boston	2 17	10
Brooklyn	2 11	9
Pittsburgh	2 09	6
San Francisco	2 07	12
Detroit	1 97	8
Saint Louis	1 84	7
Philadelphia	1.71	5
Cleveland	1 08	15
Baltimore	0.97	11
Washington	0.95	13
Gary	0.66	14
Median	2 07	

* A high score indicates dissatisfaction with city government. A low rank indicates dissatisfaction with mayor.

there is a supporting set of correlations at the individual level (.27 to .44). The white city samples are thus ordered in quite similar ways in terms of general attitudes toward Negroes. We will refer to this set of attitudes as the "White Racial Liberalism" cluster, with a high score representing the liberal end. The ordering of the cities on the composite index is shown in table 8, and for comparison we include the rank ordering of the black city samples on the "Dissatisfaction with City Government" index (with a low rank indicating dissatisfaction).

Although in Saint Louis, Baltimore, and Cleveland, white attitudes toward Negroes were relatively negative, black attitudes toward the city government were relatively positive. On the other hand, black attitudes

toward the Milwaukee city government were negative, but white racial attitude levels in Milwaukee seemed to be more liberal than average. The clearest mutual antagonism is found in Newark, where white racial attitudes were at almost the southern level and Negro attitudes toward the city government were extremely negative. Washington, on the other hand, would appear to be furthest from a direct confrontation, since it includes higher levels of white liberal views and lower levels of black alienation from government. San Francisco approaches the same position.

TABLE 8

COMPARISON OF CITY ORDERINGS ON WHITE RACIAL LIBERALISM CLUSTER AND BLACK DISSATISFACTION WITH CITY GOVERNMENT*

City	"White Racial Liberalism" Cluster Scores (White)	"Dissatisfaction with City Government" Cluster Ranks (Black)
Saint Louis	1.06	10
Baltimore	1.15	13
Newark	1.23	2
Cleveland	1.35	12
Pittsburgh	1 43	7
Detroit	1.55	9
Cincinnati	1 55	4
Gary	1 69	15
Chicago	1 76	3
Philadelphia	1 90	11
Milwaukee	1.96	1
Brooklyn	2 26	6
Boston	3.00	5
San Francisco	3 49	8
Washington	4 60	14
Median	1 69	

* A high score on the Liberalism cluster indicates greater liberalism.

Attitudes and Riots

The confrontation character of the Newark black and white samples in 1968 raises the question of the relation of these indices to the riot that occurred in 1967 in Newark and more generally to the 1967 riots. The National Advisory Commission on Civil Disorders (March 1968) classified four cities as having had "major riots" during 1967: Cincinnati, Detroit, Milwaukee, and Newark. (Two other of our fifteen cities, Boston and San Francisco, were classified as having "serious riots.") In our samples, Milwaukee, Newark, and Cincinnati are the first, second, and fourth most extreme on the black cluster of indicators of "Dissatisfaction with City Government." We have no way, of course, of knowing whether

this is cause or effect of the riots, assuming indeed there is some connection between general city attitude levels and the occurrence of riots. The fact that Baltimore and Washington, which are at the low end of the dissatisfaction scale, had riots shortly after the close of our study that were at least "serious" could be taken as evidence that these attitude levels are at least as much consequence as cause of the riots. Only a before-after study, however, could resolve this question.

What is more interesting than the positive relation of riots to city attitude levels is the clearest exception to any relation: the case of Detroit. The city that has had the most massive riot to date shows little evidence of being outstanding in any direction in either black dissatisfaction or white liberalism.

We will pursue this last point by looking at two indices that represent quite different aspects of the change in civil rights activism by Negroes since the early 1960s: Violence Orientation (variable 378) and Institutional Self-Determinism (variable 394). The former deals with one means for change advocated by some Negroes, the latter with one definition of the immediate goal of change, namely, black self-rule of such institutions as ghetto schools. The two indices turn out to be moderately related at the city level (r = .50, .21 at the individual level), but we are even more interested here in the actual configuration of cities, as shown in figure 9. One major riot city, Cincinnati, is high on *both* indices, and this city was also high on the Dissatisfaction cluster above. Another serious riot city, Boston, tends in the same direction. And Milwaukee is especially high on Violence Orientation, Newark on Institutional Self-Determinism. But more striking than these positive findings is the fact that Detroit is at the low end on both these indices, and indeed tends to be at the low end or in the middle on almost all indices we have reviewed that reflect hostile or alienated racial attitudes.

This "deviant case" finding suggests one of two things. Either our measures are not directly relevant to the causes or effects of riots or else the Detroit riot of 1967 was somehow different from other major riots. Since we find it hard to believe that these measures do not at least indirectly tap levels of manifest tension in a city, it is useful to raise seriously the question of whether the Detroit riot of 1967 was not distinctive in some fundamental way having to do with the extent that it involved, or rather failed to involve, the general black population.[20] Despite

[20] Sampling error for Detroit does not provide an explanation. The 1968 Detroit Area Study included several of these questions a few months later and discovered very similar marginal frequencies. Nor can response rate be a problem in the obvious sense of missing certain types of respondents, since, as Appendix A shows, response rate was especially high in Detroit. It is possible that, instead of missing "militants" in Detroit, the high response rate means that nonmilitants are included at a higher rate than elsewhere, thus "diluting" Detroit's rates for Dissatisfaction, Violence Orienta-

the wisdom of hindsight, our data push us toward the position of many observers in early 1967: Detroit was not a likely candidate for a riot that summer. More generally, this mixed set of findings emphasizes the possibility that similar-appearing riots may have different underlying causes. Sociologists have tended to search for one or several causes of all the recent riots, whether the search leads toward structural and demographic characteristics, toward variables such as "diffusion" or "contagion," or
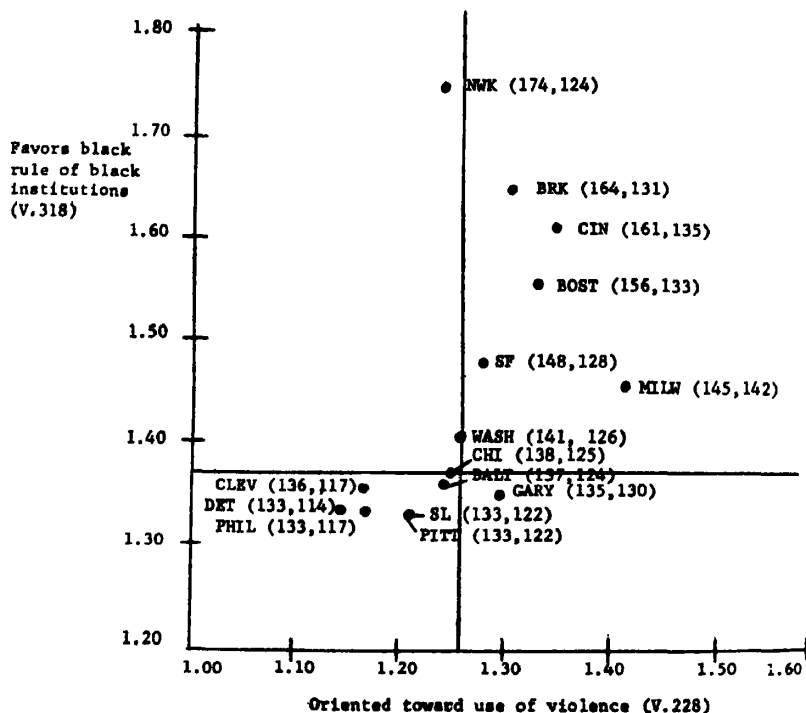
FIG. 9.—Correlation between "Institutional self-determination" and "Violence orientation" across fifteen cities (black sample).

tion, and Separatism. Such a phenomenon is suggested by a reported analysis of nonresponse in another study of riot areas in Detroit and Newark (Paige 1968). However, the response rate for Milwaukee is even higher than for Detroit (94 percent to 88 percent), and yet dissatisfaction is at its height there.

Another probably related finding is that actual participation in riots, as reported by respondents, is low in Detroit (three cases) compared with the other major riot cities (thirteen cases in Cincinnati, eight in Newark, and seven in Milwaukee). If this is not a result of sampling or response error, it implies that a smaller proportion of the black population took part in the Detroit riot than in the other three cities. Because the Detroit Negro population is considerably larger than in these other cities, it would be quite possible for it to have had a larger number but smaller proportion of its black population participating in the riot.

even toward a model of purely chance processes. It is possible, however, that several such genotypes exist and thus that our models must allow for a good deal more complexity than they do.

City Characteristics and City Effects

An initial effort will be made here to connect City to more standard components of urban analysis. In doing so, we must recognize that an ordering of only fifteen cities, however reliable, can be correlated with a great many other characteristics of cities, with little possibility of controlling one while looking at the others. Table 9 presents product-moment correlations between eight characteristics of cities—none of them reducible to individual level variables—and the black city means on twelve attitude variables. Six of the attitudes comprise the "Dissatisfaction with City Government" cluster, and we will interpret them as a set; the remaining six were chosen because they represent most other important aspects of our study and are also among the most reliable of our measures.

For the "Dissatisfaction with City Government" cluster of six variables, the most consistent relation is with estimated percentage of Negroes in 1968; the coefficient is negative in all instances and above −.40 in four of six cases. Thus black dissatisfaction tends to be greater in cities where blacks constitute a *smaller* proportion of the population. As a summary scattergram, figure 10 plots percentage of Negroes against the composite "Dissatisfaction with City Government" cluster scores; the relationship is moderate in strength ($r = -.50$), and it is not merely the result of the location of one or two cities, although the positions of Gary, Washington, and Milwaukee are clearly elevating it substantially. The low and inconsistent relations of the same six cluster variables with absolute city population indicate that it is the proportion of blacks to whites that is important, not the absolute number of either.[21] We suggest as an important hypothesis that, where Negroes constitute a small proportion of the population, they receive (or at least perceive themselves as receiving) particularly poor treatment from their city government. Simple political considerations make this likely, for under such demographic conditions Negroes lack electoral power to influence city officials and policies. At the other extreme, a black majority or near-majority has the power to elect a mayor, although the pattern of relationships in table 9 suggests that more than the mayor's office is involved, since the correlation of percentage of Negroes with the Mayor question is the lowest of the six coefficients. The general hypothesis offered here fits recent evi-

[21] Analyses using all cities in the United States show positive relations between absolute size and the occurrence of riots (see Spilerman, in press). The present results can best be interpreted as operating within a control for city size.

TABLE 9

CORRELATIONS BETWEEN CITY CHARACTERISTICS AND 13 ATTITUDES: BLACK SAMPLE

Var. No.*	Variable Description	Demographic Indicators†					Other Indicators		
		Total City Pop.	Black City Pop.	White City Pop.	% of Pop. Negro	Black Pop. Growth, 1950–60	Total City Exp. per Capita‡	Segregation Index§	Geographic Distance from South‖
"Dissatisfaction with City Government" cluster:									
45 . . .	Mayor not trying	31	23	33	−.27	− 33	−.13	−.09	−.01
380. . . .	Believes police abuse	27	08	33	−.48	−.39	.04	− 47	.69
42. . . .	Cannot affect officials	.02	− 22	12	−.51	− 19	− 08	−.28	.56
89. . . .	City government discriminates in jobs	.01	− 17	10	−.53	− 14	−.09	− 29	.34
65. . . .	Judges discriminate	−.28	−.37	− 21	−.31	08	.01	−.05	.08
44. . . .	City officials discriminate against Negro requests	.42	.20	.48	− 40	− 16	− 21	− 09	.22
Other variables:									
370. . . .	Dissatisfaction with neighborhood services	−.31	− 46	− 23	− 11	.25	− 14	.00	.44
388. . . .	Believes job discrimination	− 13	− 40	00	−.38	−.12	.24	−.53	.40
390. . . .	Believes housing discrimination	39	− 01	.54	−.78	−.46	−.12	−.13	.54
381. . . .	Experienced police abuse	49	.42	.48	−.32	−.23	−.46	.19	.28
394. . . .	Institutional self-determination	− 10	−.26	− 02	−.15	− 17	.52	−.58	.34
378. . . .	Violence orientation	−.22	− 43	−.10	−.32	40	.21	−.04	.12
452. . . .	Experienced job discrimination	−.40	− 50	− 33	−.24	.21	−.09	−.05	.33

* Variable numbers are keyed to table 1 and slightly fuller descriptions are found in that table.

† These are estimates for 1968 based on 1960 census figures and later information on Negro proportions of population in 1965 (U.S Bureau of the Census 1967b)

‡ Source· U S Bureau of the Census (1967a)

§ From Taeuber and Taeuber (1965).

‖ Cities are classified on a scale from "most southern" (=1) to "most northern" (=5), using map distances from Deep South plus some judgments as to cultural influence Classification is as follows: Baltimore (1), Boston (5), Brooklyn (4), Chicago (3), Cincinnati (2), Cleveland (4), Detroit (4), Gary (3), Milwaukee (4), Philadelphia (3), Pittsburgh (3), Saint Louis (2), San Francisco (5), Washington (2).

dence that outbursts of rioting are now occurring mainly in cities where the black proportion of population is low, has relatively little influence, and has little hope of increasing its influence by legitimate means.[22]

The absence of a correlation between attitudes toward the city government and per capita expenditures by the City suggests that spending alone does not lead to favorable black attitudes.[23] This conclusion is consistent with our earlier finding that Dissatisfaction with Neighborhood
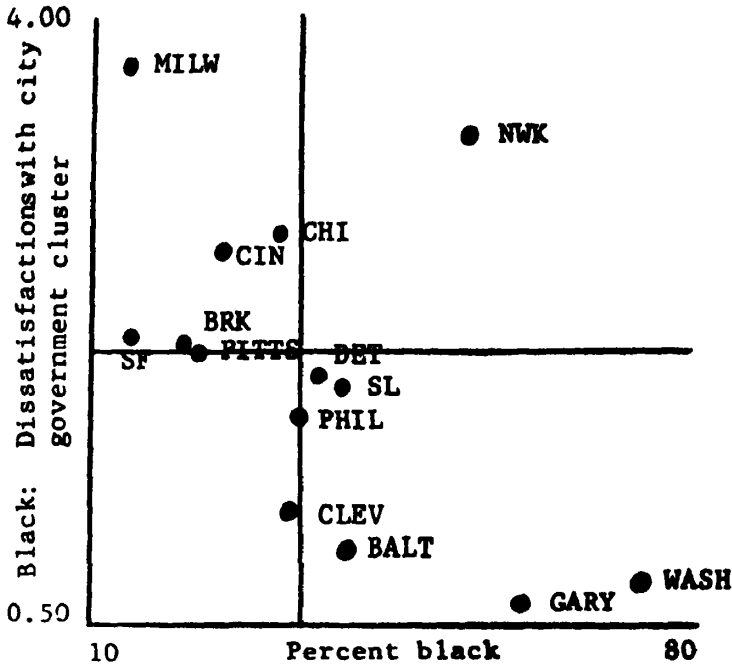
FIG. 10.—Correlation between percent black and "Dissatisfaction with City Government" cluster.

[22] During 1969 only five cities (Harrisburg, Hartford, Omaha, York, Youngstown) had civil disorder incidents characterized as riots by the U.S. Department of Justice (*Civil Disorder Digest* 1969). The percentage of Negroes in those five cities in 1960 ranged from 8 to 19 percent, and even allowing for growth through 1969, this suggests a black proportion too small to have great political impact, although large enough to provide manpower for violent action.

[23] The index used here may be inadequate in any number of ways, most obviously as an indicator of the extent to which expenditures are evenly distributed over the city. For example, expenditures and percentage of Negroes may interact in such a way that the former affects the black community only in cities where Negroes have political power to influence administration. For the five cities with Negro percentages of over 40 percent, low expenditures go with negative evaluations. The trend is too small to take very seriously, given the post factum nature of the interpretation and the size of the subsample, but is worth noting to remind us that the simple variables focused on here may be inadequate indicators of city effects.

Services is *not* much related to negative evaluation of the Mayor (table 6). In any case, it appears that the general image the city government presents to its citizens is at least as important as the dollars available for specific services. For example, Gary had the lowest per capita expenditure among the fifteen cities but the most positive black attitudes toward the city government; it also had a newly elected Negro mayor at the time of interviewing.
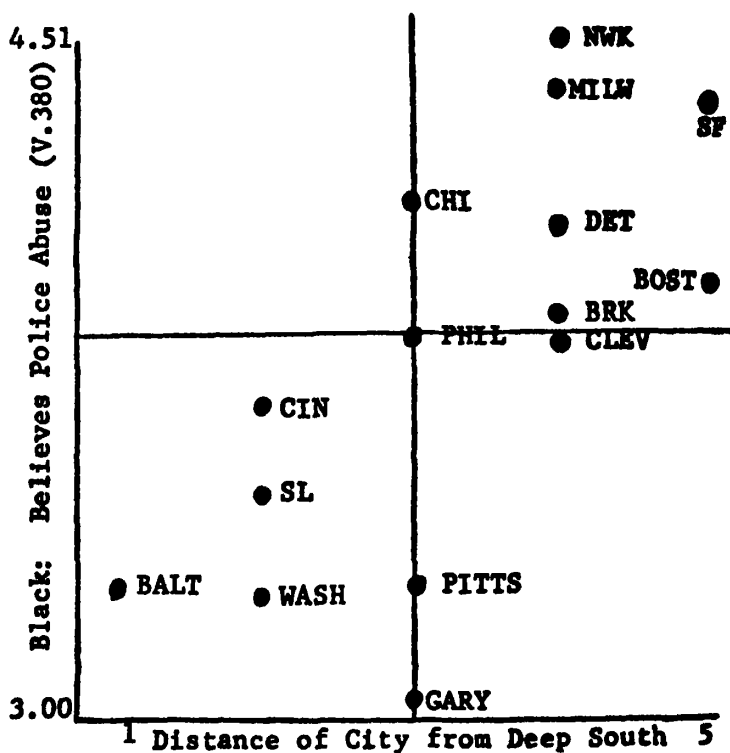
Fig. 11.—Correlation between distance from South and "Believes police abuse"

There are less consistent trends between black attitudes toward city government and both remoteness from the Deep South and low residential segregation.[24] Belief in Police Abuse increases as one moves North ($r = .69$), as does Experienced Police Abuse to a lesser degree ($r = .28$). Graphs indicate an approximately linear relationship in both cases (for example, fig. 11), but less so for the Experience than the Belief variable, which accounts for the difference in the size of the two coefficients. More interesting than this difference is the question whether police abuse really

[24] Distance from the South and lower residential segregation are themselves related in our sample ($r = .48$), as they are in the Taeuber and Taeuber (1965) full table of 207 cities.

is greater in northern cities. One suspects that potential for such abuse is fairly constant across these fifteen cities but that it has not only been activated in northern cities as a result of the 1967 riots but also has become much more of an issue there to an aroused Negro citizenry. Indeed this is perhaps the most plausible interpretation for the generally positive correlations between the North-South dimension and other variables in the table. "Believes Housing Discrimination" is higher in the North and indeed slightly higher in *less* segregated cities. Negroes in northern cities may be more ready both to challenge traditional segregation norms and to become keenly aware of their existence.

White attitudes show no consistent association with population variables (table 10). Attitudes toward Negroes, for example, do not seem to be associated either with the absolute or the relative size of the Negro population in a city. There are two exceptions: Beliefs about Job and about Housing Discrimination (themselves highly related, $r = .85$) both increase in larger cities, especially those where the black population is sparse. Or, looked at in the opposite way, where the Negro proportion of the City population is large, whites tend to deny the existence of discrimination (see fig. 12). It may be that, where Negroes are highly visible in numbers, as well as in other ways (in Newark because of the riots and in Gary because of the election of a Negro mayor), the white perception is that blacks are "taking over" rather than that they are being "kept out" by discrimination.

Shifting from demographic to socioeconomic variables, table 10 shows that the three indices making up the "White Racial Liberalism" cluster are positively and highly related to per capita city expenditures, even more highly to median white education, and somewhat less highly (and negatively) to degree of segregation. All three socioeconomic indicators are themselves interrelated, although their intercorrelations are only moderate, especially those involving median white education (.40 to expenditures and −.33 to segregation). We will concentrate on the education indicator because of the exceptional strength of its association with the liberalism cluster ($r = .90$, fig. 13). Its unusual size is partly a function of extreme values for Washington, San Francisco, and Boston, but when the effect of these is reduced by use of rank-order correlation ($\rho = .57$), it remains true that cities with more educated white populations display more liberal white racial attitudes.

This relationship might simply reflect the individual level association between education and racial liberalism. However, even when the racial liberalism index means are adjusted (by MCA) to control for educational and economic variations among the fifteen city samples, the adjusted

TABLE 10

Correlations between City Characteristics and 10 Attitudes: White Sample

Var. No.*	Variable Description	Demographic Indicators†					Other Indicators†			
		Total City Pop.	Black City Pop.	White City Pop.	% of Pop. Negro	Black Pop Growth, 1950–60	Total City Exp. per Capita	Segregation Index	Geographic Distance from South	Median City White Education Level‡
"White Racial Liberalism" cluster:										
720. . . .	Favors interracial contact	− 15	− 15	− 14	− 02	.24	62	−.59	40	.92
799. . .	Sympathy with black protest	05	09	.03	03	−.03	70	−.48	.31	.85
673. . . .	Negroes are behind because of discrimination	.01	14	− 04	.27	.19	64	− 33	−.03	.80
Other variables:										
792. . .	Conventional values	.21	.00	29	−.32	.09	−.64	.57	−.04	−.60
761. . . .	Believes police abuse	.38	.38	35	−.05	−.12	−.26	.40	−.17	.01
492. . . .	Believes housing discrimination	.38	10	48	−.60	− 11	.25	12	.33	.38
753 . . .	Dissatisfaction with neighborhood services	−.20	−.31	− 14	03	.20	02	02	.17	−.09
471. . . .	White counter-rioting	−.06	−.18	− 01	−.33	.17	.23	−.16	.47	.53
664. . . .	Prevent riots by police repression	49	58	42	.07	− 04	−.38	40	−.26	−.43
488 . .	Believes job discrimination	.47	22	54	−.50	.16	.25	−.04	.24	−.43

* Variable numbers are keyed to table 2 and slightly more complete descriptions of variables can be found in that table

† Sources · Same as table 9 above, except for ‡ noted below.
‡ U S Bureau of the Census 1962

means remain highly correlated with median city educational levels derived from the census ($r = .77$, $\rho = .57$).[25] Thus there seems to be a larger effect from, or related to, city levels of education that goes beyond the education of individual respondents. As a further check, we divided our white sample into four educational subsamples (0–8, 9–11, 12, and 13+ years of school). For each of these subsamples, we calculated the
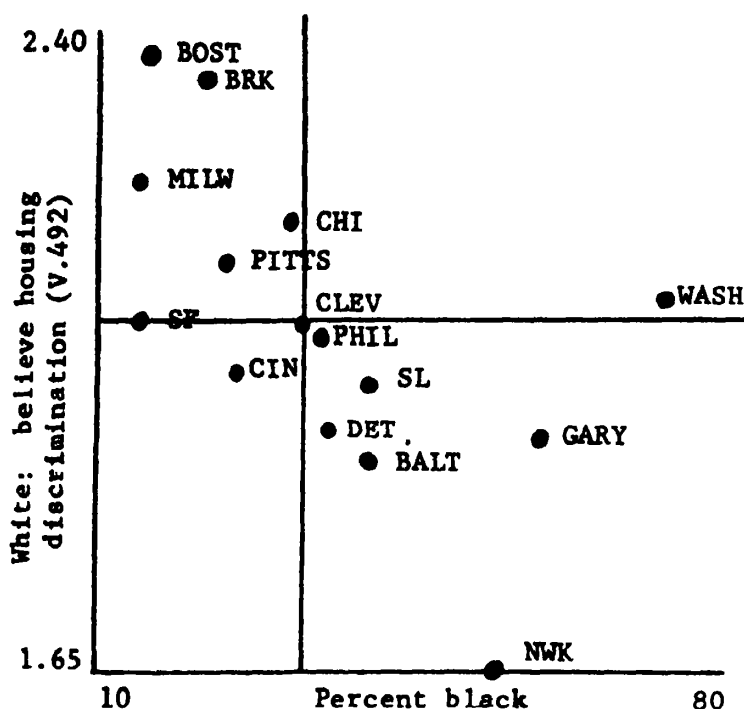
FIG. 12.—Correlation between percent black and "Believes housing discrimination."

mean city scores for the three components of our Racial Liberalism Index. We then related these city-level means to the overall median education level of the city, producing the correlations shown in table 11. There is some decrease in correlation with this control for education, indicating that part of the relationship is due to individual education, but a moderate to strong association is maintained in almost all cells. A final control procedure employed multiple regression, with median white education and the Taeuber and Taeuber (1965) Segregation Index used to predict

[25] This control was introduced by using the adjusted or net coefficients described earlier as the scores for each city. In fact, it makes little difference which is used, since a composite index using unadjusted means correlates .98 with an index built from net values.
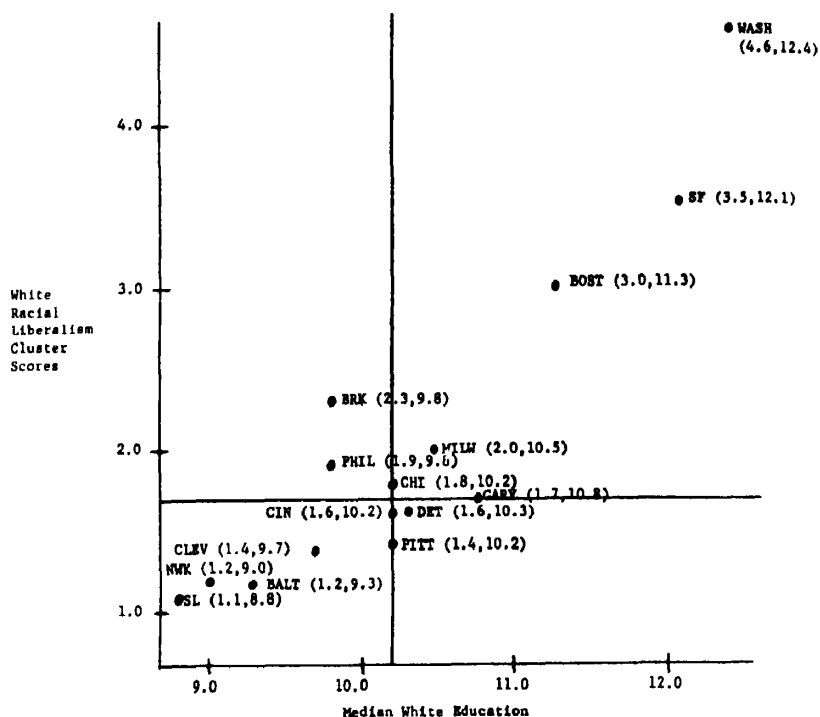
FIG. 13.—Correlation between median white education (1960 census) and "White Racial Liberalism" cluster scores.

TABLE 11

EDUCATION OF CITY WHITES CORRELATED WITH RACIAL LIBERALISM

	MEDIAN EDUCATION OF CITY WHITE POPULATION CORRELATED WITH MEAN CITY SCORE ON:					
	Sympathy with Black Protest		Favors Inter-racial Contact		Believes Negro Disadvantages Are Due to Discrimination	
SUBSAMPLE	r	ρ	r	ρ	r	ρ
0–8 years education.	.61	49	.32	.20	.50	.35
9–11 years education.	.78	.65	.83	.76	.40	34
12 years education. .	50	31	.72	75	.64	.54
13+ years education	.70	.50	.71	63	.62	47

adjusted scores on White Racial Liberalism. This yielded a β of .70 for median education and of −.21 for the Segregation Index, thus supporting the independent predictive power of white median education.

These results suggest that the educational level of the city—or something closely associated with it—affects collective white attitudes above and beyond the direct effect of education on individual viewpoints. Some common factor may, of course, lie behind both these phenomena. Certainly Boston, San Francisco, and Washington share characteristics besides high education, such as northern location or influences. No doubt selective factors also operate to draw people to certain of these cities, notably San Francisco and Washington, and perhaps away from others such as Newark (which incidentally has the second lowest white educational level of all fifteen cities). At the same time, it is certainly possible that we are measuring contextual effects from education of the following sort: a more educated city population produces more liberal institutions (city administration, local newspaper, etc.), and these in turn react upon the general population, including the less liberal elements, to liberalize it still further. Such contextual effects are suggested but hardly proved by our results, and, as in most such analyses, measurement of the presumed intervening processes is a necessary next step.[26]

CONCLUSION AND PROSPECTS

This paper set out to ascertain whether the cities in which Americans live produce distinctive effects upon citizens' attitudes, experiences, and perceptions. We believe we have shown this to be so and that we have also begun to identify some of these connections. They do not appear to be simply reflections of differences among cities in demographic composition, although there are important relations to more standard demographic and ecological indices. One can usefully explore antecedent factors that shape cities, but it is the outcome of this process—cities as perceptually "real" to individuals—that in turn shapes attitudes.

We have been impressed particularly by the extent to which City often complements Individual Attributes in explaining variations in attitudes. Having measures of both sources of variance, we are often able to explain not only more total variance in an arithmetic sense, but to understand

[26] Hauser (1970) has emphasized the arbitrary character of most contextual interpretations. We do not agree with his total rejection of contextual arguments, but do agree that seeming contextual effects need to be regarded as suggestive only and that much more specific evidence must be sought about the hypothesized intervening processes.

better the failure of Individual Attributes to be useful in certain instances. Covariance analysis, with City providing the categories within which other relationships are studied, would extend this approach.[27] It may be helpful also to expand City into a still more general social setting variable by taking account of the effects on attitudes of areas within cities, for example, the neighborhood clusters which are used in our sampling and most others. We suspect that a variable like "Dissatisfied with Treatment in Neighborhood Stores" (variable 383 in table 1, and variable 764 in table 2), which now is one of the least well accounted for in our study, would take on new life with such an analysis.[28] The aim, of course, would not be simply to add explained variance to a specific index, but rather to understand more adequately the varied sources of individual attitudes. What we have called Individual Attributes have long been standard independent variables in survey analysis. In national attitude surveys, especially those with an urban or racial focus, social setting, including but going beyond regional breaks, deserves explicit recognition and research.

APPENDIX A

Effects of Variations in Response Rate on Attitude Measures

The use of cities or other geographically defined explanatory variables presents a problem not usually encountered in survey analysis: the organization of field interviewing along lines that coincide with lines of analysis. If field interviewing staffs differ in competence or in other ways from city to city, this can contribute to between-city variance and be confounded with real differences among cities. The basic problem always exists but can be treated as unimportant for most survey analyses because distinctions among variables do not generally coincide with distinctions among individual interviewers or sets of interviewers. However, analysis by region, comparisons of city with suburban areas, and the increasing use of separate interviewing staffs for blacks and whites are open to the same type of bias as is the present study.

[27] Some preliminary exploration of City–Individual Attribute interaction has been carried out using a program developed by Sonquist and Morgan (1970). No signs of important interaction effects were detected, but more systematic covariance analysis is now under way. One might hypothesize that specific negative experience, say, with police, will be more highly related to willingness to use violence in cities where general dissatisfaction with the city government is greatest.

[28] Cf. Kish (1957) and Fields (in press).

The ways in which interviewing procedures might vary from city to city are many, subtle, and often difficult to measure. We are concerned here, however, with one obvious difference, that reflected in variations in response rates across cities—that is, the extent to which we obtained interviews from all the eligible respondents who fell into the sample in

TABLE A1

SAMPLE N'S, RESPONSE RATES, AND COMPONENTS OF NONRESPONSE RATES

	Final Sample N's		Response Rates		Components of Nonresponse: Refusal Rates		Not at Home and Respondent Absent		No Interview, Other Reasons	
City	Black	White	Black	White	Black	White	Black	White	Black	White
Baltimore	175	164	63%	73%	10%	17%	11%	8%	16%	2%
Boston	109	147	64	65	15	19	18	13	3	3
Brooklyn*	149	207	75	55	15	29	9	10	1	6
Chicago	234	145	70	54	11	25	16	16	3	5
Cincinnati	171	143	76	62	4	17	7	9	13	12
Cleveland	148	168	74	64	11	22	12	8	3	6
Detroit	199	183	88	88	2	2	6	6	4	4
Gary	255	175	77	66	12	20	9	8	2	6
Milwaukee	237	156	94	75	3	22	1	2	2	1
Newark	235	242	60	59	17	16	20	20	3	5
Philadelphia	236	206	75	69	12	20	11	10	2	1
Pittsburgh	177	206	80	67	7	18	11	13	1	2
Saint Louis	172	141	81	70	15	25	2	5	2	0
San Francisco	144	174	81	65	6	19	6	6	7	10
Washington	168	121	69	52	14	32	12	13	5	3
Mean	187	172	75	66	10	20	10	10	4	4
Median	175	168	75	65	11	20	11	9	3	4

* The New York City sample was restricted to Brooklyn for practical field reasons, all calculations here and in other tables refer only to Brooklyn.

each city. For the white samples these rates vary from 52 percent in Washington to 88 percent in Detroit; for the black samples, from 60 percent in Newark to 94 percent in Milwaukee. The mean rates over all fifteen cities are 65.5 percent (SD 8.8) for the white sample and 75.1 percent (SD 8.9) for the black sample.

Separate city sample N's, response rates, and components of nonresponse rates are shown in table A1. (Since racial identification of non-

response households was not always possible, inferences about racial composition of certain neighborhoods were needed in order to provide estimates of race-specific rates.) The major component of nonresponse for whites was generally refusal to be interviewed, while refusal and "not at home" rates were about equal for blacks. Moreover, "not at home" rates were about the same for both races, but refusals were definitely higher for whites. The difference in refusal rates by race suggests that parts of the white population are reluctant to talk about urban and racial issues, and this in turn no doubt helps to explain the results to be presented shortly. (The "no interview, other reasons" category is unusually large in Baltimore because of difficulties with a single interviewer, and in Cincinnati because a late start made it impossible to complete all the cover sheets by the cutoff date. In these cases, and probably elsewhere to a lesser extent, some nonresponse cover sheets would probably have produced ineligible households, hence nonresponse may be slightly overestimated.)

Most national studies today report response rates in the high 70s or low 80s. The mean rates for the present study are on the low side, and some of the city rates are extremely low. We have attempted to account for these variations and will present elsewhere more detailed discussion of findings. For the present, we can summarize by noting:

> 1. National response rates have always been somewhat deceptive, since it is well known by survey practitioners that rates vary in different types of localities and that these variations are simply averaged out in national figures. Specifically, city response rates are usually lower than suburban rates, which are in turn lower than rates in small towns. Rates seem to be particularly reduced in lower class and lower-middle-class white areas within city boundaries. Thus the average rates presented here are actually not far from the rates usually obtained in central cities in national surveys, although they are probably still somewhat on the low side for the white sample. This does not, of course, mean that low rates should be acceptable, but it is necessary to avoid a direct comparison between these city averages and those usually obtained for the country as a whole.
>
> 2. Our general impression from reviewing a considerable amount of material is that variations in response rates across cities were primarily organizational in origin, rather than having to do with differences in city populations. Where we had reason to believe the field staff and especially field supervision to be strong, the response rate was high. In other cases it was low. There were also larger differences among the several survey organizations whose services were used in carrying out the field work (see Campbell and Schuman 1968, p. 11).

The more relevant question for the present report is whether city response rates can account for between-city variations in attitudes. On the

black side (where response rates are generally higher), the answer seems to be negative. Neither total response rates nor refusal rates nor "not at home" rates correlate well or systematically with black attitude levels by city. One might have hypothesized, for example, that black militants would be more often missed in cities with high refusal rates and that therefore, say, Violence Orientation would be inversely related to refusal rate. No such relationship appears. More generally, a search over all the attitude variables listed in table 1 uncovered none that correlates more than .45 with any indicator of nonresponse rate, and the few correlations between .25 and .45 that occur fit no apparent pattern but tend to be contradictory.

White response rates, however, and especially refusal rates, do tend to be related in a moderate but systematic fashion to white city means, with a number (eleven) of correlations in the .40s and .50s. The patterning of these variables suggests that cities that have high refusal rates tend to show higher levels of white liberalism. A plausible interpretation of this finding is that in cities with high refusal rates we tend to miss *less* liberal people, and thus we overestimate somewhat the liberal level in such cities.

It is difficult to make precise estimates of effects because almost all the refusal rates are similar, but fortunately we have in Detroit one instance with an extremely low refusal rate (2 percent). If city attitude differences are affected quite sharply by refusal rates, we should find Detroit deviating noticeably from the other cities. In fact, Detroit falls in the middle of most distributions rather than at either extreme (see figs. 1–13). Our reasoning about refusals coming mainly from racially conservative whites implies that Detroit, with almost no refusals, should tend toward the conservative end of the city distribution, but it does not do so. Although it is possible to arrive at a variety of calculations that explain this, the simplest seems to be that rather wide variations in refusal rate per se do not greatly influence city levels of white attitudes.

In summary, there is reason to believe that white between-city variance has been inflated somewhat, but not drastically, by variations in white response rate. There is no evidence that black between-city variance has been affected, although we cannot completely rule out such effects. If these conclusions are correct, then the difference between the variance accounted for by City (minus response rate artifacts) in the black sample and in the white sample is even larger than a comparison of averages for tables 1 and 2 would suggest. That is, City continues to be highly important in understanding black attitudes but becomes somewhat less so for white attitudes.

APPENDIX B

TABLE B1

EXACT COORDINATES FOR FIGURES 2–8*

City	2	3	4	5	6	7	8
Baltimore	(184, 151)	(195, 189)	(150, 135)	(198, 190)	(240, 216)	(166, 107)	(330, 186)
Boston	(250, 170)	(263, 220)	(155, 122)	(235, 237)	(246, 212)	(210, 110)	(399, 206)
Brooklyn	(213, 176)	(229, 209)	(176, 160)	(256, 235)	(272, 213)	(199, 108)	(391, 180)
Chicago	(177, 124)	(212, 165)	(213, 141)	(233, 217)	(251, 211)	(419, 119)	(416, 260)
Cincinnati	(175, 143)	(227, 173)	(199, 150)	(217, 200)	(249, 193)	(238, 108)	(373, 197)
Cleveland	(178, 127)	(219, 179)	(106, 147)	(225, 205)	(238, 209)	(313, 104)	(385, 174)
Detroit	(220, 178)	(218, 190)	(181, 173)	(216, 194)	(226, 192)	(324, 109)	(410, 195)
Gary	(163, 157)	(253, 223)	(109, 130)	(199, 192)	(247, 195)	(161, 107)	(304, 208)
Milwaukee	(216, 133)	(245, 172)	(219, 116)	(223, 222)	(243, 191)	(403, 109)	(443, 173)
Newark	(213, 203)	(258, 195)	(229, 183)	(212, 165)	(281, 229)	(290, 106)	(451, 166)
Philadelphia	(219, 172)	(223, 192)	(193, 148)	(212, 204)	(235, 189)	(354, 108)	(390, 173)
Pittsburgh	(215, 156)	(234, 221)	(189, 167)	(247, 213)	(211, 212)	(190, 107)	(329, 194)
Saint Louis	(188, 140)	(224, 177)	(182, 166)	(218, 198)	(257, 227)	(265, 116)	(350, 235)
San Francisco	(249, 198)	(201, 166)	(136, 121)	(229, 206)	(239, 215)	(248, 112)	(439, 199)
Washington	(200, 194)	(200, 173)	(131, 126)	(184, 208)	(224, 182)	(164, 103)	(328, 182)

* Black means listed first; decimal points omitted.

TABLE B2

EXACT COORDINATES FOR FIGURES 10–12*

City	10	11	12
Baltimore	(097, 40)	(190, 40)	(330, 1)
Boston	(217, 15)	(237, 15)	(399, 5)
Brooklyn	(211, 21)	(235, 21)	(391, 4)
Chicago	(275, 31)	(217, 31)	(416, 3)
Cincinnati	(261, 25)	(200, 25)	(373, 2)
Cleveland	(108, 32)	(205, 32)	(385, 4)
Detroit	(197, 37)	(194, 37)	(410, 4)
Gary	(066, 60)	(192, 60)	(304, 3)
Milwaukee	(374, 13)	(222, 13)	(443, 4)
Newark	(328, 54)	(165, 54)	(451, 4)
Philadelphia	(171, 34)	(204, 34)	(390, 3)
Pittsburgh	(209, 22)	(213, 22)	(329, 3)
Saint Louis	(184, 40)	(198, 40)	(350, 2)
San Francisco	(207, 13)	(206, 13)	(439, 5)
Washington	(095, 73)	(208, 73)	(328, 2)

* Ordinate listed first; decimal points omitted.

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In Defense of Popular Taste: Film Ratings among Professionals and Lay Audiences[1]

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Portions of the myths surrounding popular taste are based upon the conjectures and condemnations of professional critics of popular culture. Different pictures of the professional critic have been painted: some characterize the critic as a snob; others, along with Gans, are more likely to characterize the critic as a typical upper-middle-class American belonging to the upper-middle taste public. This paper reports a secondary analysis of a direct measure of popular taste and contrasts it with professional evaluations of the same cultural product. The data are 5,644 motion pictures rated over a twenty-two-year period by members of a consumer organization and a group of professional movie reviewers. Ratings of the two groups are compared, and the snobbism of critics is tested and refuted.

INTRODUCTION

Two aspects of popular (or mass) culture are inextricably linked: popular taste (the likes and dislikes of mass audiences) and pronouncements about popular culture made by professional critics. The link between these topics is that much of what is known about popular taste derives from what professional critics think about it.

Dependence on the professional critic of popular culture for insights into the likes and dislikes of the masses is a result of the paucity of accurate measures of popular taste; direct measures are rare and not always a matter of public record. Few consumers of cultural products have the opportunity to express their likes and dislikes directly, and, consequently, the myth of popular taste is based upon scarce and inaccurate evidence. Even the media, as Gans notes, are uncertain of the standards of mass audiences: "Nor have they even been able to prove that they are giving their audiences what they want, for the feedback that they obtain from the audience is incomplete and poor" (Gans 1966, p. 606).

The professional critic is only one source of speculation about the likes of mass audiences. Often the mere presence or existence of a popular cultural product has been taken as an indicator of popular taste. Reflecting Macdonald's (1962, p. 37) view that "in masscult the trick is plain--to

[1] Helpful suggestions on an earlier draft made by Leonard J. Pinto and Marcello Truzzi, a reader for the *Journal*, have been included in this version.

please the crowd by any means," a popular cultural product is assumed to measure the likes of mass audiences simply by virtue of its production and distribution. The assumption that producers of mass culture know what the masses like and the assumption that what they produce is, in fact, liked are not easily demonstrated.

Another source of audience preference is gleaned from such indirect signposts as box office receipts, fan and crank letters, and television ratings. These signposts are largely inadequate, since merely attending a movie or watching a television program is not tantamount to appreciating it. Furthermore, the feedback and response to popular cultural products provided by fans and cranks are highly selective and not representative of the mass audience.

This paper asks two questions about popular culture and its assessment by professional critics and mass audiences: (1) Can the myth of popular taste be replaced, at least in part, with a direct measure of audience likes and dislikes? (2) Given a direct measure of popular taste, do the assessments of popular cultural products made by professional critics differ from assessments made by lay audiences?

The questions are answered through a secondary analysis of a large-scale public record of popular taste: data collected over a period of twenty-two years by Consumers Union.[2] The data are in the form of judgments or "ratings" of 5,644 American and foreign motion pictures. Each movie is rated separately by a group of professional critics and a group of lay consumers. The data are examined in order to shed light on popular taste—at least as it is expressed in ratings of motion pictures—and to contrast popular taste with the assessments of professional critics.

THE PROFESSIONAL CRITIC

The literature on popular culture contains two conflicting views of the professional critic. One is represented by Hughes (1961, p. 142), who maintains that "contemporary critics of mass culture have gotten themselves into inextricable difficulties by refusing to admit to their own snobbery." The snobbery of certain critics is illustrated in their negative assessment of mass (or popular) culture—masscult—which often overflows to include not only the product, such as the movie or television show, but also the producers, the consumer, and even the society that allows it all to happen. These critics agree with Macdonald (1962, p. 4) that "masscult is bad in a new way: it doesn't even have the theoretical possibility of being good."

The more vocal and visible critics have been subject to close scrutiny

[2] Consumers Union is a nonprofit organization established in 1936 which provides its members with information on consumer goods and services.

and examination. Shils (1957), for example, identifies their social and national origins and analyzes their social and political theories. He ties certain ideological features—Marxian socialism, for example—to a snobbery based upon disillusionment with cultural products produced for the masses.[3]

An opposite view of the critic is suggested in the work of Herbert J. Gans (1966), who argues that the professional critic is not a snob but simply a member of a taste public which is typically upper-middle class. Gans describes a number of popular cultures; there are more than one. He terms these different subcultures "taste cultures": "The diversity of information, art, and entertainment, and the diverse standards by which people choose from them, are organized into taste subcultures which I will hereafter call *taste cultures.* Each taste culture serves its own *taste public,* people who consider the content of that culture desirable" (1966, p. 580).

Several social factors influence individuals' identification with a taste public, most notably, according to Gans, class. Choices among cultural products are also conditioned by education as shown in Wilensky's (1964) study of television viewers. Knowledge of an individual's educational background is a good predictor of his choices in the popular culture marketplace. Although some controversy exists concerning the alleged speed with which differences between taste publics and educational levels are being eliminated, such differences can still be found. The disappearance of cultural levels is noticed by Wilensky (1964, p. 190): "But what is new, unique to our time, is a thorough interpenetration of cultural levels; the good, the mediocre, and the trashy are becoming fused in one massive middle mush."

For Gans, however, there are still six separate taste cultures among which the lower-middle taste culture dominates in the United States. Of the six, the upper-middle taste culture receives special attention in this paper.

Gans argues that the professional critic is not a member of the dominant lower-middle taste public, although it is that public which purchases the medium (the newspaper, for instance) presenting his criticisms and reviews. On the other hand, the critic is not a member of high taste publics. Gans locates the professional critic in the upper-middle taste public—"the professionals, executives, and managers, people who have attended the better colleges and universities" (1966, p. 588). As a member of a taste public, the critic can be expected to share the taste of that public and can be expected to find the same cultural products desirable.

[3] In addition to the works cited, examples of the material covering the professional critic of popular culture can be found in Rosenberg and White (1957) and Jacobs (1961).

As Gans (1966, p. 596) notes: "This influence [high culture] is even felt in the mass media, because most of the critics of film, theater, and television are conscious of high-culture standards, although in their evaluations they tend to apply upper-middle-culture standards."

Gans's contention that the critic of popular culture belongs to the upper-middle taste public can be tested with the data compiled by Consumers Union. These data can help determine whether the critic is a snob and assesses popular cultural products differently from lay audiences or whether he is in essential agreement with them. The following analysis delineates the character of popular taste in the upper-middle taste public by contrasting it with evaluations of professional critics.

METHOD

The most systematic public record, or collection, of evaluations of popular cultural products made by mass audiences appears monthly in *Consumer Reports*,[4] wherein, since 1947, ratings of motion pictures can be found. These ratings are obtained from a group of professional critics in addition to a group of volunteers who are drawn from the regular membership of Consumers Union. Each year CU solicits volunteers from among its members to report and rate the movies they see.

Although members of CU are drawn from all strata in American society, there is a tendency for the profile of members returning annual questionnaires[5] to reflect social and economic characteristics skewed toward the upper-middle class. In terms of such attributes as income and educational experience, there is an overrepresentation of well-to-do Americans. Information on its membership is obtained by CU through a yearly questionnaire. The 1967 questionnaire drew 200,000 responses, representing a 20 percent return. The following description of CU respondents to the 1967 questionnaire is taken from the annual report:

> The CU family has money to spend. Its median income last year was around $12,800, compared with the average U.S. family income of about $7,400 and the CU median of $11,600 the year before. . . . The median age of our respondents was about 40. The typical respondent was likely to be a college graduate (60 percent), perhaps to have done some graduate work (37 percent), and to have a couple of children. [*Consumers Report*, 1968, p. 74]

Since movie raters are volunteers, and since questionnaire returners are also volunteers, it is likely that substantial overlap exists between both

[4] *Consumer Reports* is a monthly publication of the Consumers Union. All the ratings published monthly are cumulated and presented together in *Movies for TV* (1968). The data used in this study were drawn from it.

[5] Questionnaires are sent to all CU members. They are asked to provide standard demographic background information as well as information regarding their purchases and consumer intentions.

groups. Consequently, it can be assumed that, while the 20 percent returning the questionnaire are not representative of CU membership as a whole, they are likely to be the same kind of persons as those rating movies. The examination of popular taste presented here is not intended to include the taste of all Americans or of all CU members. Obviously the CU member and movie rater is not a typical American.

Members rate movies along a four-point scale: Excellent (E), Good (G), Fair (F), or Poor (P). It is possible for the opinions of large numbers of people to be divided and, when this occurs, the disputed movie is given a two-letter rating with the first letter indicating the main vote. Consequently, any movie could receive one of ten possible ratings: P, P/F, F/P, F, F/G, G/F, G, G/E, E/G, or E. Each of 5,644 motion pictures is rated in this way by the group of CU members and a group of professional critics.

TABLE 1

HOW MOVIES ARE RATED

	CU	Critics
Naked Alibi (1955)—G. Grahame, S. Hayden	FG	FG
Naked among Wolves (1967, German and Polish)	G	G
Naked and the Dead (1958)—A. Ray, R. Massey	GF	G

SOURCE.—*Movies for TV* (1968, p. 29)

The ratings of the professional critics are compiled and presented in the same fashion as are those of the members. Each movie is rated by several critics, and a consensual measure for the group is developed. The critical reviews are gathered from several sources: *Box Office*, *Parents' Magazine*, the *New Yorker*, *Films in Review*, *Variety*, *Cue*, *Commonweal*, Film Estimate Board of National Organizations (Green Sheet), and New York daily newspapers.[6]

Each movie is rated twice: once by critics and once by CU members. Table 1 illustrates the form in which these movie ratings appear. It shows two movies which are rated equally, while one is rated unequally.

In order to contrast the popular taste of CU members with the judgments of professional critics, the following procedure was established: for each movie the pair of judgments—the critics and the members—was coded to show whether they were in agreement. Agreement means that both groups rated a particular movie identically. Disagreement can be differentiated into two categories: critics' ratings higher than members' ratings, and critics' ratings lower than members' ratings. The three pos-

[6] Personal correspondence with the movie editor of Consumers Union, January 6, 1969.

sible codes were equal ratings, critics' higher, and critics' lower. This coding procedure simply recorded the direction of the difference; it did not measure the magnitude of that difference. Large discrepancies (which were, in fact, relatively rare) were treated the same as small discrepancies. Any difference, however slight, was recorded as a difference; for example, P/F and F/P are different ratings. Table 2 shows the twenty-two-year contrast between critics' and CU members' ratings of American and foreign motion pictures.

The record shows a disproportionately large number of identical ratings of motion pictures among professional critics of popular culture and a lay audience composed of CU members, which suggests that critics and members of CU belong to the same taste public. If CU membership is typically upper-middle class, then Gans appears to be correct in locating the professional critic in the upper-middle taste public. Since members of the same taste culture find the same cultural products desirable, and

TABLE 2

COMPARING CRITICS' AND LAY AUDIENCES' RATINGS OF 5,644 MOVIES

	No. of Movies	Percentage
Critics' rating equal to lay audience rating	3,002	53
Critics' rating higher than lay audience rating	1,051	19
Critics' rating lower than lay audience rating	1,591	28
Total	5,644	100

since a substantial proportion of movies (53 percent) are rated identically by both groups, it is appropriate to argue that they constitute a single taste public.

The question may be pursued more rigorously by asking whether the obtained proportion of identical ratings (53 percent) could have been reached by chance alone. From a population of movies rated by critics and lay consumers wherein ratings are equally likely to be identical or different, how likely is it to obtain 53 percent identical ratings for 5,644 movies? The probability of such an occurrence is less than .01, implying that there is a tendency for movies to be rated equally by both groups rather than differently. Identical ratings appear to be a statistically stable and systematic phenomenon among professional critics and lay consumers.[7]

[7] The entire population of movies and ratings was used in this study. The significance of the statistic is, as Gold (1969, p. 46) suggests, substantively important. There is undoubtedly some interaction between professional critics and CU readers, at least to the extent that the latter read critics' reviews in magazines such as the *New Yorker* or *Parents' Magazine*. Some proportion of identical ratings between critics and readers can be attributed to CU readers' attempts to imitate professional judgment. The

The record of agreement between critics and CU members can also be shown year by year. Table 3 presents the proportion of ratings in each year that are identical for both groups. The proportion of equal ratings is referred to as *consensus*. It can be seen that consensus is not constant throughout the study period. The proportion of identical ratings varies from a low of .272 in 1947 to a high of .709 in 1954. The trend of consensus during the twenty-two-year period is not linear but is regular; it reaches its peak in 1954 and then declines to a level slightly higher than the level

TABLE 3

IDENTICAL RATINGS BY CRITICS AND CU MEMBERS

Year	*N*	Proportion
1947	36	.272
1948	69	.389
1949	95	.443
1950	115	.452
1951	91	439
1952	213	569
1953	233	.656
1954	195	.709
1955	169	652
1956	148	635
1957	152	605
1958	194	586
1959	160	533
1960	155	571
1961	138	509
1962	122	502
1963	162	545
1964	143	535
1965	139	482
1966	118	460
1967	129	395
1968	26*	412

* *Movies for TV* was published in 1968 and consequently included relatively few movies produced that year

at the beginning of the study period. Perhaps accidently, the peak consensus year, 1954, was also an important political year, marking the condemnation of Joseph McCarthy by the U.S. Senate on December 2.

The issue of snobbism among professional critics can be pursued another way by examining motion pictures which were rated unequally by critics and CU members. Snobbish critics could be expected to rate *good* movies higher than lay audiences and *bad* movies lower. The data can be

proportion, however, is likely to be relatively small since many of the professional reviews used by CU appear in vehicles not usually seen by lay audiences, for instance, *Cue*, *Variety*, or *Box Office*.

analyzed to throw light on the question of whether good movies are rated higher by professional critics than they are by lay audiences.

Two measures have to be developed in order to answer the last question: a measure of excellence of movies and a measure of higher ratings by critics. The latter measure is the easier of the two and can be developed in a straightforward way from the data. Since each year in the study period can be represented by the proportion of agreements and disagreements between critics and members, it is possible to rank years in terms of the proportion of ratings in that year which reflect a higher rating of the critic over the CU member. Years can thus be ranked in terms of their proportion of higher critics' ratings.

A measure of motion picture excellence poses some difficulties. No attempt is made here to resolve the question of aesthetic standards. Only a relatively few studies have examined the issues of the validity of aesthetic preferences and the degree of agreement between experts and non-experts (Getzels and Csikszentmihalyi 1969). For the moment, aesthetics can be set aside for an expedient. A movie is defined as a "superior" movie if it receives from both professional critics and CU members a rating of Excellent (E) or Excellent/Good (E/G).

Each year can be represented by the proportion of movies produced in that year which are rated (E) or (E/G). Years can be ranked in terms of their proportion of "superior" movies. Table 4 shows this rank order. It can be seen that 1950 shows the highest proportion of "superior" movies. The year 1954 (the highest consensus year) places in the center of the rank order. Apparently consensus and quality movie making are not related.

Years are ranked on two different variables: their proportion of "superior" movies and the proportion of ratings where critics rated the movies higher than did CU members. The question raised is whether there is a relationship between superiority in the quality of movies and critics' higher rating of them. The Spearman rank correlation between these two variables is .31 and is not statistically significant. There is no relationship between "superiority" and higher critical ratings. (The Pearson coefficient of correlation between the *number* of "superior" movies each year and the *number* of higher critical judgments is .39, not significant).

Another measure of snobbism and its refutation compares critics' and members' ratings of motion pictures which subsequently received the highest award of the movie industry, the Academy Award. A comparison of ratings for award movies shows them equally distributed through each of the three coded categories: 33 percent agreement between critics and members; 33 percent disagreement with critics rating movies higher than members; and 33 percent disagreement with critics rating movies lower

than members.[8] Although fewer movies are involved, it seems that consensus on award movies (33 percent) is much weaker than on ordinary films (53 percent). An argument for snobbism, however, is not supported by ratings of Academy Award motion pictures.

A test of critics' snobbism can also be made using Film Critics Awards —annual awards issued by the New York film critics in recognition of creative achievements in motion pictures. During the period 1948–67, twenty-one awards were given to the "best motion picture" of the year

TABLE 4

RANK ORDER OF YEARS BY PROPORTION OF OUTPUT RATED "SUPERIOR" BY CRITICS AND READERS

Year	P (Superior Movies)	R
1950	080	1
1952	.070	2
1957	064	3
1948	.059	4 5
1956	059	4 5
1958	052	6
1949	049	8
1959	049	8
1960	049	8
1953	042	11
1965	042	11
1966	042	11
1947	041	13 5
1954	041	13 5
1964	039	15
1951	037	16 5
1961	037	16.5
1962	.035	18 5
1963	035	18 5
1955	032	20
1967	027	21
1968	006	22

(no award was given in 1962, but two were given in 1960). The pattern of critics' and CU readers' ratings of Film Critics Award movies is identical to their ratings of Academy Award films: 33 percent of the Film Critics Award movies are rated identically by both groups; 33 percent of these movies are rated higher by critics than the lay audience; and 33 percent are rated lower by critics than readers. The similarity in ratings for both sets of award movies is not suprising since 74 percent of Academy Award films are also Film Critics Award films.

A final test of snobbism compares critics' and readers' ratings of foreign

[8] Only twenty-one Academy Award movies are rated by critics and CU members.

films. It has often been said that American audiences have been treated to better-than-average foreign film fare since films exported to this country are specially prepared and selected. If this is true, then foreign films shown here are "quality" motion pictures of a certain kind. Even if foreign movies are not an adequate criterion of motion picture excellence, a comparison of their ratings by critics and readers is interesting in its own right. Table 5 shows how critics and CU members rate foreign language movies. The classification system employed by Consumers Union emphasizes foreign language and not simply national origin; consequently, British films do not appear in table 5.

Agreement between critics and CU readers is slightly higher for foreign films than for films in general, and, once again, the argument for snobbism is defeated. Ratings for foreign language films show that, when critics and readers disagree, both types of disagreement appear with

TABLE 5

COMPARING CRITICS' AND LAY AUDIENCES' RATINGS OF FOREIGN MOVIES

	No of Movies	Percentage
Critics' rating equal to lay audience rating	244	55
Critics' rating higher than lay audience rating	99	22
Critics' rating lower than lay audience rating	103	23
Total	446	100

roughly the same frequency: 22 percent of foreign movies are rated higher by critics than by readers, while 23 percent are rated lower by critics. The comparison between disagreements over foreign films with disagreements over all films shows a slight tendency for professional critics to rate foreign language films higher than do CU readers. As a measure of quality, however, neither award films nor foreign films support the contention that distinctiveness and snobbism characterize the professional critics' assessments of popular culture.

DISCUSSION

Popular culture is a permanent fixture in American life. Whether for better or worse, it has apparently embraced the professional critic, at least those critics who review motion pictures. The evidence presented here supports the solid placement of critics in the upper-middle taste public. It is that public which guides critics' evaluations of popular cultural products. Snobbism, if it exists among critics, must be more characteristic of those professional critics known for their essays than of those professional critics who regularly write movie reviews.

Consensus between critics and members of Consumers Union was shown to vary systematically through the study period, achieving its peak in 1954. Further research might pursue the question of whether consensus on cultural products parallels consensus on political issues. Do the forces encouraging dissent in one part of the social structure also influence dissent in others? Or do independent influences alter the integration of the taste culture? Another inquiry might examine the social existential conditions contributing to changes in cultural integration in society.

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Homans on Exchange: Hedonism Revived[1]

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George C. Homans's theory on social exchange is critically examined and found to have serious shortcomings with regard to its deductive and inductive aspects. An especially prominent shortcoming concerns the tautological character of his concept of "reward," which makes his theory deductively unclear and empirically untestable. Homans's critique against functionalism is also applicable to his own theory. His system exhibits a number of similarities with classical hedonism and is in large measure subject to the same criticisms that have been aimed at hedonistic principles.

Since George C. Homans claims that his writings on social exchange form a coherent inductive-deductive system (1961*a*, pp. 8 ff.; 1964*b*), they need to be analyzed on those terms. The main thesis of this paper is that the generality of Homans's propositions, and his ability to subsume a great variety of studies of social behavior under them, is dependent on a number of serious shortcomings in his theoretical structure. A particularly prominent shortcoming concerns the tautological character of his concepts of "reward" and "cost." Rather than being a strict inductive-deductive scheme, his theory is a system of all-encompassing principles closely akin to classical hedonism. (On hedonistic assumptions, see, e.g., Hobbes's introduction to *Leviathan*; Beccaria's *Essay on Crime and Punishment* [1764; English translation, 1769]; Jeremy Bentham's *Introduction to the Principles of Morals and Legislation* [1789]; and for the application of the pain-pleasure principle in economics, e.g., W. S. Jevons's *The Theory of Political Economy* [1871].)

Homans's theory on exchange has, of course, been critically reviewed on several occasions (see esp. Boulding 1961; Buckley 1967; Davis 1961; Sorokin 1966; and *Sociological Inquiry*, vol. 34 [1964], a special issue devoted to Homans's writings), and to a certain extent this paper will be a synthesis of such criticisms. However, previous commentaries have usually dealt with aspects of the conceptual apparatus as isolated from the propositions (see, e.g., Blau [1964*b*] on the concept of distributive justice; Shibutani [1964] on "sentiment"; Parsons [1964] on the definition of "elementary" social behavior; Buckley [1967] on Homans's conceptualization of equilibrium and institutionalization). Much attention has

[1] I am indebted to several friends for reviews and criticisms of earlier versions of this paper, especially Bo Eneroth, Walter Korpi, and Bijoy Sarkar, University of Stockholm; and Jack Hammond and Moshe Schwartz, University of Chicago. The shortcomings are all mine.

also centered on the consequences of Homans's psychological reductionism (see, e.g., Buckley 1967, pp. 109–13). But inasmuch as the widespread acceptance of Homans's system would appear to be based in large measure on an uncritical acceptance of the propositions, they need to be analyzed in terms of their character and their importance to his scheme.[2]

Since Homans himself considers *Social Behavior—Its Elementary Forms* (1961*a*) to be a work on a higher theoretical level than *The Human Group* (1950; cf. 1961*a*, pp. 8 ff.), the gist of the argument to follow will be based on the first-mentioned book plus its post-1961 sequels (Homans 1964*a*, 1964*b*, 1964*c*, 1967*a*, 1967*b*). The following four points may be taken to represent Homans's approach to theory construction in the social sciences.

1. *Psychological propositions are the fundamentals of social theory.*—This "reductionist" aspect of Homans's sytem has given rise to much controversy. He confronts criticism by maintaining that the recognition of the need for psychological explanations may speed up the process of unifying the social sciences (1964*a*; 1964*b*; 1967*a*, pp. 73–75; 1967*b*, pp. 30–32). While this standpoint may or may not be fruitful—whether one accepts it is largely a matter of judgment and hardly resolvable by scientific arguments (see Buckley 1967, p. 109)—the practical usefulness of Homans's particular application of reductionism hinges on the specific character of his hypotheses.[3] Apart from this aspect, the question of the advantages or disadvantages of reductionism falls outside the scope of this paper. For further arguments, see, for example, Asplund (1969), Boulding (1961), Deutsch (1964), and Parsons (1964).

2. *These propositions explain a large number of social phenomena.*[4]—Essentially, they are of two kinds: (*a*) psychological and (*b*) economic. As Homans notes, both types are variants of one line of thought: "Briefly, both behavioral psychology and elementary economics envisage human behavior as a function of its pay-off; in amount and kind it depends on the amount and kind of reward and punishment it fetches" (1961*a*, p. 13) In short, this principle is represented by the following simple formula Profit = (Reward) – (Cost). This is the hedonistic-utilitarian doctrine about the individual's motivation to maximize pleasure and minimize pain (see, e.g., Everett 1966; Allport 1968, pp. 10 ff.).

[2] Cloyd and Bates (1964, pp. 120–21) show that the earlier parts of Homans's books, where basic terms are defined and general propositions presented, are cited in far greater proportion than the latter parts, in which particular studies are presented and explained in terms of the system.

[3] "Hypothesis" will be used synonymously with "proposition." A theoretical structure consists of hypotheses on different levels: a high-level hypothesis explains (Homans's term is "general proposition"); a low-level hypothesis describes (Homans: "descriptive proposition"). (See Galtung 1967, pp. 452–53.)

[4] For a list of the propositions, see Homans (1961*a*, 1967*a*, 1967*b*).

3. *The postulates are general (of high level): this increases the "power" of the theory (1964b, p. 952).*—"Power" in this context refers to the possibility of incorporating a large number of lower-level (particular) hypotheses within a high-level (general) hypothesis. It does not refer to the *predictive* power of the hypotheses.

4. *The task of the theoretician is to arrive at a deductive scheme through inductive method.*—Concepts and hypotheses, formulated on the basis of empirical data, are in turn subjected to empirical testing. As Homans points out, at least some of the hypotheses have to be testable, that is, "contingent in the sense that experience is relevant to their truth or falsity or to that of propositions derived from them" (1964*b*, p. 952).

THE FUNCTION OF "REWARD" IN THE DEDUCTIVE SYSTEM

Deduction is a strictly logical construction, by which lower-level hypotheses are implied by higher-level hypotheses. In Homans's deductive system, the concept of "reward" is utilized in two ways: (*a*) as an independent variable and (*b*) as an intervening variable.

A "Reward" as Independent Variable

The argument typically exhibits the following form:

1. The individual tries to maximize his profit—that is, to arrive at a reward surplus vis-à-vis costs.
2. A certain condition, W, is rewarding; a certain other condition, non-W (or $\bar{W}$), is not rewarding.
3. Thus, the individual tries to approach condition W rather than $\bar{W}$.

Note with regard to (1), that although this proposition contains both "reward" and "cost," Homans often drops the latter term when interpreting the various empirical studies. This is unsatisfactory, since a main problem in exchange theory is to demonstrate that rewards—measured independently of costs—actually outweigh the costs. Leaving the latter factor out of the discussion—for instance, by assuming that individuals in an exchange situation "lack alternative and richer sources of reward" (1961*a*, p. 211)—only emphasizes the ad hoc character of the system. (See also p. 279, n. 6.)

However, although simple and not particularly exciting, this is a perfectly legitimate deduction, and Homans uses it frequently—for instance, in discussing the importance of "value homophily" for association between Person and Other (1961*a*, pp. 214–16), in treating the problem of conformity to norms (1961*a*, pp. 116 ff.), and in analyzing competition (1961*a*, pp. 130 ff.). But it loses all practical usefulness if it is changed to: "a certain condition, W, is rewarding; a certain other condition, $\bar{W}$, is also rewarding." This would lead to the prediction that the individual tries to approach both W and its complement, $\bar{W}$. Exam-

ples of this kind of reasoning are, as we shall see, not infrequent in Homans's production. Consider the following quotation: "Sometimes it is the difference between their values that makes exchange between [two people] probable. . . . Thus we assumed that, in the given circumstances, Person valued help more than he did approval, and Other approval more than he did help, and this difference made exchange between them probable. *In this case, the values of the two men were complementary But sometimes it is the similarity between the values of the two men that cements their relationship*" (1961*a*, p. 214; emphasis added). "Sometimes" value *similarity* is rewarding, and "sometimes" value *differences* are rewarding. Obviously, for this type of deductive reasoning to be fruitful, we would need specifications of the settings in which a certain factor is rewarding, and in which it is not. Homans deals with this problem by his concept of "givens," although in an unsatisfactory manner, since a "given" often is confused with factors that are *utilities*—for instance, value similarity and status (1961*a*, chap. 11) (two "givens" to which this objection does not refer are geographical location and similarity of background). To improve the deductive scheme, "givens" should be defined exclusively as setting characteristics, independent of the utilities involved.

B. "Reward" as Intervening Variable

Homans sometimes also employs "reward" as a variable intervening between the independent and dependent variables of a particular study design. Although his objective is somewhat unclear, it seems that the goal is to extend an explanation which Homans considers too narrow or restricted in its original version. For instance, from knowledge about the *status* of certain individuals, Homans ventures to predict their rank order in *esteem*. "Since the ability to reward other members tends to be associated with outside status, and people who actually do reward others tend to get their esteem, then it should be a good bet that the order of members in outside status would also be their order in a number of measures of esteem or of things like interaction that are associated with esteem" (1961*a*, p. 222). Thus, status is associated with the capacity to give rewards; reward capacity is associated with esteem, hence, status is associated with esteem (the implication is valid, but to corroborate it by empirical evidence, rather strong requirements on the strength of the correlations have to be fulfilled; see Galtung 1967, pp. 468–69).

The use of an intervening variable may be motivated by a gain in effectiveness in predicting empirical outcomes. We may use an intervening variable "because the connection between the [variable] whose values are being predicted [and the intervening variable] is more imme-

hiate and direct than is the linkage between the outcome and the original variable employed" (Dubin 1969, p. 82). To estimate "directness," it is a necessary requirement that the intervening variable be measurable. A second motivation for the inclusion of an intervening variable in a theoretical system may be the fact that it enhances our "understanding" of the original relationship; that is, it provides for a better explanation of the connection between the independent and the dependent variable.

It is questionable whether "reward capacity" fills the first requirement of measurability. The concept is much too diffuse to permit translations into empirical indicators, and Homans does not give any indications as to how it might be operationally defined. Also, I seriously doubt that it fills the second requirement of explanatory capacity.[5] It may be argued that a *limitation* of "reward" actually provides for a better explanation, or, expressed differently, that a number of subclasses of "rewards" may help us to better understand the relationship between status and esteem. This is also consistent with the requirement of testability.

We know on the basis of common observation and a host of sociological research data that there is an empirical relationship between status and esteem among the general population. Our knowledge that there exists such a *general* relationship is enough for predicting a correlation between status and esteem among *particular* groups. Hence, it is not quite true that "the process of prediction runs parallel to the process of explanation," as Homans claims (1961*a*, p. 222). One may predict rather safely without understanding very much. (For another example of "reward" as an intervening variable, see Homans's discussion of friendship relationships as a function of physical proximity [1961*a*, p. 211].)

The obvious diffuseness of the concept of "reward" in deduction makes Homans's comparisons between, on the one hand, the general proposition on profit as a function of reward and cost and, on the other, Newton's inverse-square law of gravitation somewhat overpretentious (see Homans 1961*a*, p. 206; 1964*b*, p. 953). In both types of deductive scheme discussed above, the concept of reward adds little to our ability to understand social phenomena, and nothing when it comes to predicting them. The law of gravitation does both explain and predict, and sociology still has to wait for its Newton.

[5] This, of course, is my personal opinion. Others may feel different, which illustrates that implication is a matter of degree—that is, a question of what one is willing to accept (or feels to be a "necessity of thought," *Gedankennotwendigkeit*). I do not feel that "reward capacity" is particularly *gedankennotwendig* in the explanation of the correlation between status and esteem. Instead, a multitude of (empirically ascertainable) intervening variables will probably have to be substituted for "reward capacity" to provide the necessary links between the two concepts. (On implication as a question of degree of intersubjectivity, see Galtung 1967, p. 467. Galtung remarks that the proportion of scholars who agree that a certain implication is a "necessity of thought" will probably be "a decreasing function of the distance from the originator of the theory containing the implication.")

THE INDUCTIVE SYSTEM

From a logical standpoint, induction and deduction are usually regarded as parallel procedures. But, as Cohen and Nagel state, "while induction and deduction are not opposed as forms of *inference*, nevertheless deduction is not concerned with the truth or falsity of its premises, while the characteristic nature of induction is to be concerned with just that. Induction may therefore be viewed as the method by means of which the material truth of the premises is established" (1961, p. 278). The inductive process is fruitful to the extent that the units sampled for observation are representative of the class to which they belong Generalizations enable us to arrive "at conclusions which are true in proportion to the care with which our generalization is formulated and tested" (Cohen and Nagel 1961, p. 14). "Fair sampling" is, as the statisticians remind us, important for optimizing the degree of truth in inductive generalizations. The empirical truth of our premises will affect the empirical truth of our generalization.

In order for the premises to do this, however, the generalization will have to be falsifiable, that is "contingent" in the sense that Homans uses the word. If it is not, *any* observation may do as the basis of induction. In other words, the question of the representativeness of the observations becomes irrelevant. Or, differently expressed, the general proposition which has been established is always true, that is, *is valid regardless of the selection of empirical cases.*

A number of corollaries follow from the last paragraph:

> *Corollary 1.*—In using research reports as empirical support for the generalization, it ought to make no difference whether correct or incorrect methods have been used in data collection and analysis of the original studies.
>
> *Corollary 2.*—As well as using a set of observations, A, as a basis for the generalization, it should be possible—with equal result—to use the complement, $\bar{A}$.
>
> *Corollary 3.*—No observations or research findings of human behavior can be found that contradict the general proposition.

Let us examine these corollaries with reference to Homans's writings

1. The Applicability of Faulty Research Methodology

Homans makes frequent use of Roethlisberger's and Dickson's Western Electric studies as a basis for inferences regarding conformity to norms, the proportionality of rewards and investments, the relationship between interaction and esteem, and so on (Homans 1961*a*, pp. 162, 188, 235–37) The Hawthorne studies were badly designed, to the point of making one critic exclaim that their limitations "clearly render them incapable of

yielding serious support for any sort of generalization whatsoever"[6] (Carey 1967, p. 416; see also Sykes 1965; Boalt and Westerlund 1953, pp. 173, 196).

The reader might say in defense of Homans that even if the Hawthorne studies were badly designed, this does not necessarily disqualify Homans's conclusions about, for instance, the existence of a relationship between interaction and esteem. Such a contention overlooks two things, however: (1) that Homans is concerned with using the research findings as support for his *general* propositions, and that lack of validity of particular findings will have consequences for the validity of the generalizations; and (2) that Homans himself recommends the inductive method in order to develop deductive systems, and should, one hopes, be aware of the importance of valid support for such systems. His obvious lack of concern, however, with the quality of the original data shows that he is caught in the tautological web of his central concepts. That is, *anything* appears to support the generalizations, and thereby the question of methodology simply becomes irrelevant. Thus, corollary 1 is valid.

2 Contradictory Observations as Evidence

The use of contradictory observations as support for the general reward-cost principle is a notable characteristic of Homans's system. Let me illustrate this by some selections from his works. It should be noted that this type of reasoning is exhibited not only in *Social Behavior* but in later works as well (e.g., 1967*a*, 1967*b*).

Example 1.—Homans says, in his discussion of the transfer of economic principles to human behavior:

> [The "economic man"] may have any values whatsoever, from altruism to hedonism, but so long as he does not utterly squander his resources in achieving these values, his behavior is still economic. Indeed if he has learned to find reward in *not* husbanding his resources, if he values *not* taking any thought for the morrow, and acts accordingly, his behavior is still economic. In fact, the new economic man is plain man. [1961*a*, pp. 79–80]

Example 2.—On altruism:

> So long as men's values are altruistic, they can take a profit in altruism too. Some of the greatest profiteers we know are altruists. [1961*a*, p. 79]

Example 3.—In a commentary on conformity:

> Should he fail to conform, he forgoes social approval from at least some of the members of his group, and this cost will be greater the less open to him are alternative sources of social approval. If, for instance, there is no other group he can escape to, he is more apt to give in. Savages, who seldom have

[6] The investigators made no attempts to determine the representativeness of the experimental groups, failed to check the relevant experimental variables in groups

> another tribe than their own that they can join, are great conformers. He is also more apt to give in if no other members of his own group share his values the lot of the isolate is often hard. But if there are such persons—not just nonconformists but nonconformists of his own stripe—then he may not have to give up social approval altogether. Even a single such man seems to be a great comfort, and robs the group at one stroke of the greater part of its power. [1961*a*, p. 118; cf. 1967*b*, p. 49]

Example 4.—On conspicuous consumption:

> It has long been known that the law of demand does not always hold good. I believe it does not always hold good of perfume and other commodities that go into what Veblen called "conspicuous consumption." Up to some point, the higher the price of a perfume, the more likely the consumer is to buy it. But even the exception can be explained by the same general proposition, for to a consumer of perfume, I am told, a rise in its price, provided the perfume and its high price are well known, positively enhances its value as a symbol of status, so that as the price increases, it is not just the cost that increases but the value too, and for a time the latter may increase disproportionately, making a consumer more rather than less likely to buy. [1967*a*, p. 49]

Example 5.—On status symbols:

> Suppose that in a particular group powerful persons are apt to wear purple clothes. Then a man who, without being powerful, is able to acquire and wear purple clothes may by presenting this stimulus to others achieve some of the effects of status. . . . [B]ut, alas! anything may become a status symbol, and a conspicuous lack of concern about status may be the best status symbol of all. [1967*b*, pp. 62–63]

Thus, it is rewarding (1*a*) to husband one's resources and (1*b*) not to husband one's resources. It is rewarding (2*a*) to be an egoist but also (2*b*) to be an altruist. One achieves rewards by (3*a*) conforming and (3*b*) not conforming. There are potential rewards in the fact that the price of a commodity is (4*a*) low but also that it is (4*b*) high. It is rewarding (5*a*) to concern oneself with status but also (5*b*) to be totally unconcerned about it. More examples could be cited, but this should suffice to support corollary 2.

3. Homans's Game

Homans's Game is aimed at the falsification of corollary 3 and is played in the following way. The player who initiates the game—let us call him Person—invites some friends (for instance, Other and Third Man) to enumerate as many studies of social behavior as they can recall (Other and Third Man should be well read in social psychology to ensure maximum excitement). Other and Third Man stake one dollar each for every study cited, on the condition that Person pays each one of them

that did *not* work under experimental conditions, and used groups that were often too small to allow the determination of significant correlations (Carey 1967, p. 416).

ten dollars for every study that Person is *in*capable of interpreting in terms of rewards and costs. Person then starts explaining; and, provided that he follows the rules laid down by Homans (i.e., defining "reward" and "cost" in such a way as to include all possible cases), the upper limit of Person's profit will be determined only by the amount of studies that Other and Third Man are able to recite. His own risk of losing money is zero, as long as his colleagues are generous (or naïve) enough to allow him to continue using Homans's extremely broad definitions. Thus, the rules are simple, and the game should appear very inviting to Other and Third Man; apart from beating Person, they may derive some sinister satisfaction from the prospect of finding the one case which is needed to disprove corollary 3 and thereby the major argument of this paper. While we wait for Other and Third Man to find this case, we may tentatively regard corollary 3 as valid.

THE MEASUREMENT OF "REWARD"

In an attack on functionalism, Homans has criticized its central concept of "structural continuity," saying: "[N]o method has been proposed measuring the variable 'degree of maintenance of structural continuity.' Under these circumstances, a proposition containing this term becomes so weak that nothing definite can be derived from it" (1964*b*, p. 965). A little later, he adds that "one may regard [such propositions] as inherently not supportable. . . . Accordingly the deductive systems in question are not by my definition theories at all" (1964*b*, p. 967).

But how about "reward"?[7] In the many senses in which it is employed by Homans, it has precisely those shortcomings Homans attaches to "structural continuity": no method has been proposed for measuring it, and propositions containing "reward" become weak to the point of prohibiting clear deductions. Thus, *we may state the main problem of hedonistic theory as being the definition and delimitation of "reward."* The following points seem relevant to this argument.

First, hedonist theory should identify *main classes* of rewards, instead of unsystematically enumerating a number of isolated utilities in an ad hoc fashion, which is the way Homans approaches the problem. In fact, in this sense Bentham compares favorably with Homans, since Bentham's

[7] As Jonsson (1969) points out, in Homans's theory "reward" and "cost" are for all deductive purposes identical. "Nothing can be said with the concept of 'cost' that cannot be said by using only 'reward.' For suppose that we know (i) the rewards for all items in Ego's behavior repertoire. We can then calculate (ii) the costs of all items in Ego's behavior repertoire [since Homans defines 'cost' as the reward of an activity forgone]. But nothing can be predicted on the basis of (i) and (ii) which could not be predicted on the knowledge of (i) alone, simply because no information has been added" (1969, p. 16). For this reason, the rest of the discussion above will not deal separately with "reward" and "cost."

Principles to a large extent are concerned with grouping various types of rewards. Unfortunately, however, like Homans, he frequently includes contradictory events under "pleasures"; for instance, he speaks of both "pleasures of benevolence" and "pleasures of malevolence."

Second, although we have to admit that under certain conditions both "benevolence" and "malevolence" may be rewards, we have to answer the very important question: *to whom* in *which situations?* The utility functions may vary considerably between individuals in a given setting (for instance, as a result of socialization processes), and, for a given individual, what he considers to be rewarding or punishing may differ strongly from one situation to another.

Third, in the attempts at delimiting the concept of "reward," the problem of *supply* becomes acute. In exchange theory, interaction is viewed as a process of transaction of "social merchandise," that is, is seen as the transference of something from the sender to the receiver. To the sender the process should constitute a certain *loss*, and to the receiver, a certain *gain*. To make the economic analogy useful, we would have to introduce also the supply of the "merchandise." If such a supply exists, we may link the concept of value to the increment or reduction of this supply; the greater the reduction of Ego's supply of merchandise X, the greater its value to Ego.

It appears that much of the activity that is central to Homans's theory—for instance, social approval—has no quantifiable supply On the contrary, "approval" (and "esteem," "liking," etc.) seems to be created *in the very moment it is exchanged* (Jonsson 1969, p. 20) so that no possibility exists of measuring the amount of available approval before the exchange takes place. A recommendation which follows from this is that only activities for which definable and *exhaustible* supplies exist ante facto should be included in the hypotheses of exchange theory.

To a certain extent, we are helped by the concepts of *extrinsic* and *intrinsic* rewards (Blau 1964*a*, pp. 35–38). It appears that the formulating of testable propositions is easier with the former than with the latter Extrinsic rewards like money and time (which both may be construed as taken from Ego's limited supplies and given to Alter) are, according to this criterion, preferable to intrinsic ones like "love," "approval," "esteem," and the like. (One may reflect over the comparably greater success of the application of hedonistic principles in economy. Here, "value" is defined rather narrowly in monetary terms; the relative agreement among economists as to methods of measuring "value" has probably contributed to the more advanced state of the hedonistic calculus in this field [see Davis 1961, p. 458].)[8]

[8] Homans mentions that "[m]y theory does not require the assumption that two men can compare what used to be called the 'subjective value' of their rewards" (1964*c*,

Fourth, our conception of appropriate principles of measurement will affect the empirical usefulness of the concept of "reward." Homans's behavioristic approach involves some obstacles, related to (*a*) his adherence to "objective" indicators of essentially "subjective" concepts and (*b*) his sometimes misplaced suspicion of verbal accounts by research subjects.

As Sorokin (1966) has noted, Homans defines "sentiment" as *overt* behavior. In Homans's own words "[sentiments are] not inferred from overt behavior; they *are* overt behavior and so directly observable" (Homans 1961*a*, p. 34). If we were to follow this principle, we would lose considerable freedom in distinguishing between different types of sentiments (in the "subjective" sense). Sentiments *overtly* construed will often be invariant from situation to situation, masking strong differences in their meaning to the actors. The statement "I love you" would, if we follow Homans, yield the same prediction (*a*) in a situation where Person feels genuine affection for Other and (*b*) in a situation where Person dislikes Other but uses the words to exploit him/her. (See Jonsson 1969, p. 9.)

Knowing the *experiences* of individuals and their perceptions of rewards of certain acts is often of great importance for understanding and predicting their behavior. Although verbal accounts by research subjects sometimes have low validity, one has to allow for flexibility in the choice among empirical indicators and avoid rejecting verbal accounts a priori. Probably as a consequence of his behavioristic position, Homans takes a restrictive stand toward questionnaire-type measures, even in cases when they seem highly reliable indicators of overt behavior. Thus, faced with the problem of estimating the value of tea versus milk to a thirsty Chinese, he says: "If we rule out the operation of asking the Chinese which he prefers, and many sociologists do rule out this sort of operation as unreliable, what are we left with? Our only way of estimating the relative value of milk and tea is to observe whether he will do more work (or pay more money) to get the one than to get the other" (1964*b*, p. 954). In a situation like this, with very little ego involvement on the part of the subject, I can hardly see why we could not trust the Chinese and take him for his word. He would probably be less embarrassed to answer a simple question than having a couple of sociologists (we need at least two) hanging around him at lunchtime.

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p. 223). If so, one has to ask: Lacking common standards for the determination of "value," how is it then possible to measure it? The check of the truth or falsity of a hypothesis requires independent measurements by indicators about which there is relatively high intersubjective agreement.

CONCLUSIONS

Our discussion of Homans's theory on social exchange leads to the following conclusions:

1. The hedonistic assumption of reward surplus must be tied to well-defined and limited sets of utilities, preferably of the extrinsic rather than the intrinsic type.

2. To the extent that the theory uses economic analogies, the utilities should in principle be *exhaustible* and the supply of such utilities determinable *before* the exchange takes place (i.e., be determinable independent of the act itself).

3. A liberal position vis-à-vis the selection of empirical indicators of central concepts like "reward" is necessary. We often need information about the subject's private experience of the outcome of a certain act, thus, "meaning," "definition of the situation," and other similar concepts seem strategic and imply that a pure behavioristic approach to exchange processes is insufficient. (It should perhaps be added here that Homans is a behaviorist more in intention than in actual practice.)

4. A taxonomy of settings for social exchange will prove useful "Setting" must, however, be defined independently of utilities. The concept of "given" does not, as we have seen, meet this requirement

In these respects, Homans's theory is inadequate. It is a problem for *Wissenssoziologie* to explain why his system has been met by such wide popularity and remarkable acceptance (see Oromaner 1968), in spite of its lack of methodological insight, its absence of inductive and deductive clarity, its bypassing of the important problem of defining "reward," and its exaggerated optimism about the unification of the social sciences As most tautologies, it is highly convenient for extensive ex post facto interpretations, and this may explain part of its appeal. But Homans's system is hardly less objectionable than functionalist theory; and if we were to apply his own criteria, we would be tempted to classify it, as Homans does with functionalism, as "no theory at all." However, there is a certain heuristic value in the hedonistic thesis which finally, perhaps, may prove useful in sociology. We are indebted to Homans that this dominant line of thought has been brought together with a large number of studies of social behavior.

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Professional Standing and the Reception of Scientific Discoveries[1]

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The Matthew Effect occurs when scientists receive differential recognition for a particular scientific contribution depending on their location in the stratification system. Merton originally introduced the concept to explain the allocation of credit among authors of multiple discoveries or collaborators. In this paper the concept is generalized to apply to all scientific work. If the Matthew Effect were to operate, the reception of papers of equal quality should be influenced by the location of their authors in the stratification system. To test this hypothesis, data are drawn from several studies of similar design. In each study we control for the number of citations papers received at time 2. This enables us to look at groups of papers that were judged to be *roughly equal in quality* at time 2. We then see whether there were any differences in the reception of these papers at time 1 depending upon various aspects of the author's location in the stratification system. All the data indicate that assessed quality of papers at time 2 is a more important determinant of a paper's initial reception than any of the stratification variables. However, the speed of diffusion of papers of equal quality is influenced by the reputation of the author based on past work that is being heavily utilized at the time of a new discovery. The Matthew Effect also operates for those scientists located at prestigious points of the social system of science. All other stratification variables, including eminence as measured by receipt of awards, did not influence the speed of diffusion. Data are presented that indicate that top papers written by high-ranking scientists are no more likely to be widely diffused early than are top papers by low-ranking scientists. However, lesser quality papers by high-ranking scientists receive greater attention than papers of equal quality by low-ranking scientists. The Matthew Effect also serves to focus attention on the work of little-known men who collaborate with scientists of high repute and to increase retroactively the visibility of the early work of scientists who go on to greater fame. A discussion is included of the relevance of these data for the study of resistance to scientific discoveries.

Progress in science depends upon the rate of discovery and the efficiency with which discoveries are evaluated, diffused, and incorporated into the body of scientific knowledge. For this reason, the sociology of science

[1] Revision of a paper read at the annual meeting of the American Sociological Association, August 1968. The research was conducted under a National Science Foundation

analyzes the social or "external" conditions which affect the processes of discovery, evaluation, and diffusion.[2] This paper presents data from a series of studies of the diffusion of scientific ideas.

We have started with the null hypothesis that sociological variables have no influence on the processes of science. Indeed, it is this hypothesis which is probably held by many working scientists. The development of science is seen as the result of the internal dynamics of scientific ideas. If science were comprised of nothing more than the dynamics of ideas, it would be the most rational of human institutions; the evaluation and diffusion of discoveries would depend solely upon their intellectual substance. Neither the personal attributes of the discoverer and his location in the social structure of science nor the similar characteristics of his audience would influence the reception of the discovery.

An alternative hypothesis for this paper was presented by Robert K. Merton (1968). In his paper, "The Matthew Effect in Science," Merton suggested that in science as in other areas of human life those who are rich are likely to get richer.[3] The Matthew Effect consists "in the accruing of greater increments of recognition for particular scientific contributions to scientists of considerable repute and the withholding of such recognition from scientists who have not yet made their mark" (p. 58). Merton hypothesized that if two scientists independently make the same discovery, the considerably more eminent one will get the greater or perhaps all the credit. Likewise, if scientists of greatly differing status collaborate, the one who is most eminent will get the lion's share of the credit for the joint effort. Merton performs a functional analysis of the consequences of the Matthew Effect both for individuals and the social system. Since the Matthew Effect involves misallocation of credit, it is dysfunctional for the careers of some individuals; however, it is hypothesized that this same misallocation is distinctly functional for the communication system of science. Since the evaluation and utilization of papers in part depends upon the reputation of the author, discoveries made by eminent men or having eminent men as coauthors are more likely to be quickly incorporated into the body of scientific knowledge. "It leads us to propose the hypothesis that a scientific contribution will

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[2] Historians of science have divided the influences on the development of science into "internal" and "external" influences. By "external" they mean all those influences which are not intellectual (see Hall 1963).

[3] Merton takes the title of his paper from the Gospel according to St. Matthew: "For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath."

have greater visibility in the community of scientists when it is introduced by a scientist of high rank than when it is introduced by one who has not yet made his mark" (p. 59).

It is the purpose of this paper to empirically test the "Matthew Effect" hypothesis. Although Merton implies that the Matthew Effect applies to all scientific work, he limits his analysis to cases of multiple discoveries and collaboration. He did this since a test of the Matthew Effect is valid only if the reception of work of equal quality is considered. In a multiple discovery the work of all participating authors is of equal caliber; and in collaboration, two or more authors are producing the same discovery. When scientific papers are of unequal quality, it cannot be said to what extent differences in reception of these papers result from the position of their authors in the stratification system or from the intrinsic qualities of the papers. For this reason, an ideal test of the Matthew Effect would use multiple discoveries. However, multiple discoveries are difficult to identify, and the concept of the Matthew Effect would have greater utility should it turn out to apply to all kinds of scientific discoveries. We are interested in the influence of location in the stratification system on all discoveries.[4] Is work of a given quality more quickly recognized and more widely diffused when the author occupies a position of eminence? To test the influence of stratification variables we must be able to control for the quality of papers.

Fortunately, the *Science Citation Index* (*SCI*) provides a useful measure of the impact or quality of scientific papers and of their diffusion.[5] By looking at the number of citations to papers, we can roughly gauge their quality. Citation counts must also be used as a measure of the speed and extent of a paper's diffusion. In all the studies reported here we have begun by counting the number of citations received by a sample of papers in the 1966 *SCI*. By controlling for the number of citations received in 1966 we can get groups of papers that, several years after publication, have equal impact or are, in our terms, of equal quality. We then look at the citations received by the same papers at an earlier point in time, a time closer to their publication. These earlier citations tell us the extent

[4] The currency of the stratification system consists of informal prestige, formal honorific awards, and positions at prestigious institutions. All these are highly correlated with the assessed quality of a man's work. However, as in society at large, there are many cases of disequilibration. In this paper we treat the different dimensions of the stratification system separately. We are interested in which aspects of a man's rank have the greatest influence on the reception of his work.

[5] In recent work most sociologists of science have accepted citations counts as an adequate measure of the quality of scientific work. For a discussion of the validity of this measure, see Cole and Cole (1967). We make no claim that the use of citations to measure quality is free from error. However, the correlation between the number of citations and other indicators of the quality of work is so high that we believe that citations may be used as a measure of quality until a more exacting one is developed.

to which papers that were utilized to the same extent at time 2 were utilized at time 1. The hypothesis is that, if assessed quality at time 2 is controlled, the assessed quality of a paper at time 1 will partly depend upon the position of its author(s) in the stratification system. To test this hypothesis, we make use of data drawn from several different studies, all of which are similar in design. All deal with citations to papers at two points in time. One study makes use of a sample of papers published in the *Physical Review;* two others of the research output of a sample of university physicists. Another study makes use of a random sample of papers from several fields of science. All studies will be described in detail as we proceed.

TABLE 1

DISTRIBUTION OF CITATIONS IN 1966 TO PAPERS PUBLISHED IN THE *Physical Review* IN 1963

N Citations in 1966	*N* Papers	Cumulative Percentage
0	342	29
1	216	47
2	173	62
3	128	72
4	89	80
5	62	85
6 or more	177	100

SPEED OF DIFFUSION

The literature of modern science, as Price (1963) has pointed out, grows at an exponential rate. In most scientific journals more than 50 percent of the references are to work published within the preceding five years.[6] In a science inundated by new literature, it is important that new ideas be recognized and utilized quickly. If a discovery is not recognized soon after it is made, there is a high probability that it will not be recognized at all.[7] Given the importance of early diffusion, we begin the analysis with data from a study of the immediate reception of papers published in the *Physical Review* in 1963. We took a two-thirds sample of these papers and looked them up in the 1966 edition of the *SCI*. The distribution of citations in 1966 to the 1,187 papers studied is presented in table 1. These statistics, generated from an analysis of the papers published in one of the most prestigious scientific journals in the world, suggest that

[6] The *Physical Review* is not only the most prestigious physics journal, it is also the most widely read journal (see Cole and Cole 1968).

[7] For an estimate of the number of papers that are ignored at time of publication and later recognized, see p. 302.

most papers have little or no visible impact on later-published papers. In the third year after their publication, 29 percent of the papers wer not cited even once, and 85 percent received five or fewer citations.[9] W decided to study the reception of those papers which have a *relativel* high impact, the 15 percent cited six or more times in 1966. These 17 papers received an average of ten citations in 1966 and an average of si citations in 1964, the year after their publication.[10] The correlation be tween the number of citations received by the paper in 1966 with th number received in 1964 was high ($r = .72$). This indicates that paper receiving heavy use three years after publication were also likely to re ceive relatively heavy use in the first year after publication. The correla tion, however, is not perfect; some papers that were deemed useful i 1966 went unnoticed in 1964.[11] If the Matthew Effect were in operation we would expect that, when the number of citations a paper received i 1966 is controlled, the location of the authors in the stratification systen of science would affect the initial reception of the papers in 1964. If th response to papers were solely on the basis of their scientific content there should be no systematic differences in the reception of the work o eminent scientists and noneminent scientists, young and old, scientists i the top departments and those in the less prestigious departments.[12] Th data are presented in table 2.[13]

[8] For more evidence on this point, see Cole (1968).

[9] It should be clear that we are dealing with citations in a single year: 1966. Some o the papers not cited in 1966 may have been cited in 1965 or 1964.

[10] Throughout the research reported in this paper we have faced a number of difficul methodological problems One of these has been the increase in the number of journal covered by the *SCI*. Since its inception in 1961, the *SCI* continued to add journal from which it indexed citations. Thus, it is possible that an increase in citations to a paper between 1961 and 1966 might not be due to this paper being more widely use but, rather, to an increase in the *SCI*'s file. In order to assess the effect that increas in file would have on the results, we controlled for this in one study; we counted onl citations in 1966 that appeared in journals included in the 1961 file. Since we foun that the increase in file was randomly distributed, with the work of all groups o scientists benefiting equally from the increase, we concluded that it was unnecessar to control for this increase in the other studies.

[11] There were hardly any cases in which a paper received more citations in 1964 tha in 1966.

[12] Perhaps a more serious methodological problem than the increase in *SCI*'s file wa the problem of multiple authorship of the papers studied. In the study reported here data were collected on all the authors of each paper. However, since the authors of a given paper often came from different levels of the stratification system, any varianc due to stratification might be washed out by using the author as the unit of analysis Therefore, the paper was used as the unit of analysis; each paper was classified as i it had been written by the ranking author, i.e , the one having the highest position This was determined by the number of honorific awards listed after a man's name ir *AMS* and whether or not he was a Fellow of the APS. In cases where there were nc differences in the rank of collaborators, the first author was treated as the ranking author. In the other studies reported in this paper, we have been unable to collect

In A of table 2 the ranking authors of the 177 papers are classified by the number of citations their other papers received in 1964. The number of citations to other papers may be taken as an indicator of repute based upon scientific accomplishment. Those physicists whose other work had received a large number of citations had earned a widespread reputation as a result of their past scientific success. Those whose other work had received few citations had achieved a very limited or no scientific reputation based upon their scientific accomplishment. These data indicate that scientific reputation based upon past performance does have some influence on the reception of new discoveries. The more citations a physicist's other work had received in 1964, the greater was the probability that a

TABLE 2

CORRELATION AND PARTIAL CORRELATION COEFFICIENTS BETWEEN EARLY RECOGNITION OF PHYSICS PAPERS AND SEVERAL STRATIFICATION VARIABLES (*Physical Review* SAMPLE)

Stratification Variable	Correlation with Early Recognition*	Partial Correlation with Early Recognition, Controlling for Quality†
A. Scientific repute (*N* citations in 1964 to all other papers)	23	.18
B. Rank of academic department (1963)‡	21	.18
C. Membership status in APS (193)	− 04	00
D. *N* honorific awards (1963)	13	−.04
E. Prestige of highest award (1963)	12	01
F. Age (1963)	04	− 02

* Early recognition is measured by the number of citations the paper received in 1964.
† Quality is measured by the number of citations the paper received in 1966.
‡ All authors not working in academic departments were excluded from the analysis

data on all authors of papers and have therefore treated each paper as if it were written by the first author The results of these studies are confirmed by the similar findings in the study which treats all the authors of a paper. A more complete testing of the hypotheses would, of course, require the collection of data on all the authors of papers included in the sample. The information on the author's characteristics were collected from *AMS*. In the case of academic scientists, the rank of their department was based upon ratings reported in Cartter (1966).

[13] Before beginning the analysis of the data in this table, the difference should be clarified in the way the Matthew Effect is being used here and its use by Merton. Merton used the Matthew Effect to describe the consequences of the *sharpest* differences in rank. Most of his examples are of Nobel laureates, the most eminent scientists, collaborating with or being partner to a multiple discovery with a student or other scientist of low visibility. In generalizing the concept of the Matthew Effect, we are using it to describe the effect on the diffusion process of stratification on all levels. Although all the data in table 2 are relevant for a test of the Matthew Effect in its more general sense, only some of them, specifically those dealing with sharp differences in rank, are relevant for a test of the Matthew Effect as the concept was used by Merton.

new significant discovery would be immediately recognized (i.e., receive a large number of citations in 1964, a year after publication). The zero-order relationship between the number of citations in 1964 to the other work of the physicist and the number of citations in 1964 to the paper under consideration is $r = .23$.[14] In order to eliminate variation due to differences in the quality of these papers, we control for the number of citations they received in 1966 and examine the partial r. Since the partial r in A of table 2 is .18, we may conclude that a man's reputation based upon past published work did have an independent effect on the reception of a new paper.

Another variable which had an independent effect on speed of diffusion was the scientist's institutional location: B of table 2 indicates that men at distinguished academic departments are the most likely to have their work immediately cited. Tabular treatment of these data showed that institutional location made little difference among those with more than fifty citations to their other work; however, among those with fewer than fifty citations to other work, the physicists at the distinguished departments still were considerably more likely to have their work quickly recognized. We may conclude that if a physicist had produced work in the past that was currently being heavily utilized, the probability would be very high that a new important discovery by him would be immediately recognized regardless of where he worked. However, if a physicist had not produced important work in the past his chances of having a new discovery immediately recognized would be better if he worked at a high-prestige academic department. These latter physicists are aided by their location at strategic points in the social system of science; they are more likely to be tied into the informal communication system of their discipline.

For C of table 2 we divided the ranking authors of the 177 papers into those who are Fellows of the American Physical Society (APS) and those who are not. Fellows are elected for having made an original contribution to physics;[15] only 10 percent of the APS's 25,000 members hold this honor. The data indicate that Fellows are no more likely to have their papers immediately recognized than are non-Fellows. If being a Fellow is taken as an indicator of some degree of eminence, we can say that the Matthew Effect does not operate in this situation. This conclusion is supported by the data in D of table 2. Here we have classified the authors by the number of honorific awards listed after their names in *American Men of Science* (*AMS*). Although the zero-order relationship between number

[14] For a hypothesis as to why this correlation coefficient was not higher, see n 16

[15] Whether or not a physicist was a Fellow of the Society was determined by stars appearing before the man's name in the society's membership directory, *Bulletin of the American Physical Society*, ser. 2, vol. 10, 1965.

of honorific awards and initial reception of the paper is .13, this correlation is totally due to variation in the quality of the papers. When the number of citations the papers received in 1966 is controlled, the partial r is $-.04$. Similar results were obtained when we used the prestige of the ranking author's highest honorific award as the independent variable (see E of table 2).[16]

The findings on age are also contrary to the original hypothesis. We at first thought that older scientists who were still publishing might be more visible and therefore have their work more immediately recognized than their younger colleagues. It turns out that papers written by men under forty are no less likely to be immediately recognized than those of scientists over forty (F of table 2). We may conclude that longevity in the field does not enhance one's chances of having papers immediately recognized.

The data of table 2 give us a better idea of the extent to which several aspects of the stratification system of science influence the reception of papers. The most important fact is that the quality of the paper being studied, as measured by the number of citations it received in 1966, exerts the primary influence on whether or not a paper receives immediate recognition Thus, science does closely approach its ideal of rational evaluation of work. Although scientists are clearly universalistic in evaluating new papers, several aspects of location in the stratification system have some influence, the most important of which is the scientist whose repute is based on past work that is being heavily utilized at the time of a new discovery. The Matthew Effect also operates for those people located at prestigious points of the social system of science. Contrary to our hypothesis, however, eminence, at least as measured by the data of C and

[16] Prestige of awards was determined by a previous survey (see Cole and Cole 1967). In interpreting these data, we should take into consideration that the sample was not large enough to give us great differences in eminence as conferred through formal awards. Tabular treatment of the data showed that those physicists who were not in *AMS* fared less well than those who did appear. These data seem to indicate that only substantial differences in eminence will affect the speed of diffusion. Those scientists who are not known well enough to be listed in the *AMS* and therefore have very low visibility may have to wait longer for their work to be diffused. For evidence on the high correlation between eminence and visibility, see Cole and Cole (1968). In that paper, "visibility" was defined as the extent to which a sample of university physicists said they were familiar with a man's work. At first it may appear odd that we found no correlation between the mean number of citations papers received in 1966 and the eminence (as measured by status in the physical society and number of honorific awards) of their authors. This finding, which goes contrary to those in our previous work, is probably an artifact of the way in which the sample was chosen. Since only high-quality papers were chosen for the sample, it was unlikely that we would find significant differences in the mean number of citations *in 1966* to the papers no matter how we divided the authors. We are confident that had we included *all* papers in the *Physical Review* we would have found a correlation between the number of citations the papers received in 1966 and the eminence of their authors.

E of table 2, had no influence on the speed of diffusion of a scientist's work.

At this point, we can return to an analysis of the functional consequences of the Matthew Effect for individuals and the communication system of science. This study includes only those discoveries which were at time 2 recognized as significant; there is, of course, no way of identifying significant discoveries which are wholly overlooked as a result of the low visibility of their authors. If any such papers exist, there is a possibility that the authors might be "victims" of the Matthew Effect Since there are no data on overlooked papers, this must remain conjecture.

What about the papers that were not overlooked? The Matthew Effect clearly involves inequities in recognition for work of roughly equal significance. Men, for example, who are not at distinguished departments and whose other work is not widely used, must wait longer for their discoveries to be recognized. Is the Matthew Effect functional for scientific communication? In the cases of multiple discovery and collaboration, the Matthew Effect is functional for science: nothing is lost, and speed of diffusion is achieved. However, when the Matthew Effect is applied to all types of scientific work, it may be seen as dysfunctional for scientific advance. Consider two papers of equal quality but of different subject matter written by authors of different rank. If one is immediately recognized and incorporated into the body of scientific knowledge and the other is ignored, progress will be less rapid than if both significant discoveries were immediately recognized. If we start from the assumption of a model of complete rationality in which all significant discoveries were immediately recognized, then delay in recognition of the work of men of low rank would be dysfunctional. However, if, as we know to be the case, diffusion is partly influenced by the author's characteristics, then we can see the early recognition of the work of high-ranking men as functional Perhaps most important, however, is the fact that a large majority of significant discoveries are immediately recognized. It is not necessary to explain the immediate recognition of the paper of a high-ranked man It is more sociologically problematic to explain a delay in the recognition of a paper of equal quality by a low-ranked man.

THE MATTHEW EFFECT IN COLLABORATION

So far the significance of the Matthew Effect in determining the speed of diffusion of scientific discoveries has been examined. Each paper has been treated as if it had only one author.[17] This, of course, is far from the case; the 177 papers had a total of 362 authors. We now address ourselves to the next question: how do the attributes of the coauthors affect the recep-

[17] See n. 12.

tion of scientific discoveries? The data tell us nothing about the dysfunctions of the Matthew Effect for some of the collaborators, but they do provide an approximate test of the hypothesized communication function of the Matthew Effect in collaboration. If the Matthew Effect is indeed at work, we should find that when a man occupying a low rank in the stratification system publishes a paper with a colleague of substantially higher rank, his work will be more quickly diffused than if his collaborators were of equally low rank. To test this hypothesis we divided the 362 authors into two groups: those who had high scientific repute on the basis of past work and those who had little or no scientific repute on the basis of past work.[18] (Authors having no collaborators were excluded from the analysis.) Then, within each of these groups we computed a correlation coefficient between the scientific repute (number of citations in 1964 to other work) of the most highly cited collaborator and the initial reception of the 1963 *Physical Review* paper.[19] We then had to compute partial r's, controlling for the quality of the paper (number of citations in 1966). The results, presented in table 3, offer clear support for the alternative hypothesis of this paper. Authors of little or no scientific repute benefit from having high-repute collaborators. Furthermore, this finding is not an artifact of differences in quality of the papers. Although the correlation coefficient is not very high, the Matthew Effect does aid the diffusion of the work of scientists who have not yet acquired a reputation on the basis of past work. When we classified the collaborators by other variables such as the number of honorific awards they have received, we found no evidence of the presence of the Matthew Effect. This was to be expected; for if honorific awards would not aid the diffusion of one's own work they were unlikely to aid the diffusion of the work of one's collaborators.

[18] If this were not done, it would be impossible to find any variation due to repute of collaborators. If a paper had a high- and low-repute author, they would cancel each other out; the high-repute author receiving no increment in visibility from his low-repute collaborator The validity of this procedure is supported by the data. When we lumped together the two groups of authors of table 3, we got a zero-order correlation of .09 and a partial r of .05.

[19] Here again we face the problem of papers having more than one author. We could only include those papers on which the collaborators were either the only author or the first author, as this is how the *SCI* is arranged. However, in previous work we found that the correlation between the number of citations to the work on which a man was the only or first author and the number of citations to all his work was very high, $r = .96$ There was an additional problem in classifying coauthors. In cases where an author had more than one collaborator, we decided to classify the author by his most highly cited coauthor rather than adding the citations to the other work of all collaborators. However, there are some cases in which increases in visibility of work due to the visibility of collaborators might be additive. This would occur when each of the collaborators had different audiences rather than overlapping audiences. A more refined analysis would be necessary to pinpoint the effects on diffusion of various patterns of collaborators.

EXTENT OF DIFFUSION

So far we have limited the analysis to short-term diffusion of papers published in one journal. These data may suggest that science approaches its ideal of rationality more closely than in fact it does. In designing a study that deals with a short period of time and with papers in only one journal, we may be "controlling out" the variables which produce divergences from the ideal. It is possible that some articles published in 1963 that will ultimately be deemed useful were not yet recognized in 1966. We might also find that the stratification system has a greater impact on diffusion of ideas when we consider the whole of a man's work published over a longer period of time in many diverse journals. In this section of the paper we analyze how the stratification system influences the extent of diffusion of discoveries over a longer period of time.

TABLE 3

CORRELATION AND PARTIAL CORRELATION COEFFICIENTS BETWEEN EARLY RECOGNITION OF PHYSICS PAPERS AND THE SCIENTIFIC REPUTE OF THE AUTHOR'S COLLABORATORS (*Physical Review* SAMPLE)

Scientific Repute of Author	Correlation between *N* Citations in 1964 to Other Work of Most Highly Cited Coauthor and Early Recognition*	Partial Correlation between *N* Citations in 1964 to Other Work of Most Highly Cited Coauthor and Early Recognition, Controlling for Quality†
Low (0–19 citations to other work)	24	.24
High (20 or more citations to other work)	– 02	– 02

* Early recognition is measured by the number of citations the paper received in 1964.
† Quality is measured by the number of citations the paper received in 1966

To begin with, the citation patterns of the work of a random sample of 1,196 university physicists were examined.[20] We were specifically interested in the most highly cited paper published by each physicist between 1950 and 1961.[21] Since we want to study the diffusion of discoveries with relatively high impact, any scientist not having a pre-1961 paper with at least ten citations in the 1966 *SCI* was excluded from the analysis. We

[20] For a description of this sample, see Cole and Cole (1967). It is a random sample of all those members of university departments granting one or more Ph.D.s each year between 1952 and 1963. We have excluded approximately 100 cases on which we could not obtain *AMS* information.

[21] We limited our study to papers published between 1950 and 1961 because we wanted some differences in the age of papers, but we felt it would be too difficult to interpret changes in rates of citations to papers published prior to 1950, as our earliest citation index is for 1961. It turned out that differences in the age of papers did not influence our results.

now wanted to see the extent to which papers judged to be of equal value in 1966 were utilized in 1961, a point in time closer to their publication. If the Matthew Effect is in operation, we should find that when quality of the paper is controlled the higher the rank of an author in the stratification system, the more widely diffused his discoveries would be in 1961.

In analyzing table 4 we must again begin by noting that the "quality" of papers (i.e., the number of citations in 1966) is a more important determinant of extent of diffusion than any of the stratification variables. The correlation between the number of citations received in 1966 and 1961 was .69. The zero-order correlations between the stratification variables and extent of diffusion in 1961 ranged from .33 for the repute of the

TABLE 4

CORRELATION AND PARTIAL CORRELATION COEFFICIENTS BETWEEN EXTENT OF DIFFUSION OF PHYSICS PAPERS AND SEVERAL STRATIFICATION VARIABLES (UNIVERSITY PHYSICIST SAMPLE)

Stratification Variable	Correlation with Extent of Diffusion*	Partial Correlation with Extent of Diffusion, Controlling for Quality†
A. Scientific repute (*N* citations in 1961 to all other papers)	33	.02
B. Prestige of highest award (1961)	24	.10
C. *N* honorific awards (1961)	22	08
D. Age (1961)	18	02
E. Rank of academic department (1961)	17	03

* Extent of diffusion is measured by the number of citations the paper received in 1961.
† Quality is measured by the number of citations the paper received in 1966.

scientist's other work to .17 for the rank of the author's academic department. More instructive, however, is the fact that the partial correlations obtained when the number of citations to the paper in 1966 (the control for quality) is held constant are sharply reduced. The only two variables that have even a slight independent effect on reception of the papers are the prestige and number of honorific awards. These data on papers from a wide range of journals and over a longer period suggest that the Matthew Effect, in the sense it is used here, had relatively no independent influence on the diffusion of scientific ideas. Those papers which were heavily used in 1966 were also heavily used in 1961, regardless of the location of the authors in the stratification system.

Although the Matthew Effect did not influence the extent of diffusion of the "best" papers of the university physicists, it might have influenced the extent of diffusion of high-quality work done in other fields of science. We studied all papers (in the various fields of science covered by the *SCI*)

which were published between 1950 and 1961 and received at least thirty citations in 1966.[22] These papers, still heavily cited five to sixteen years after publication, represent a sample of the most significant discoveries of the time in a wide range of scientific disciplines. Would the Matthew Effect make any differences in the diffusion patterns of these ideas?

The stratification variable used was the repute of the scientist's other work as measured by the number of citations this work received in 1961. The data indicate that whether or not one's past work was being widely used did not affect the extent of diffusion of the paper. Although the zero-order correlation between citations to other work in 1961 and citations to the "super" paper in 1961 was .20, this correlation was reduced to .02 when the number of citations the paper received in 1966 was held constant. The papers of those scientists whose other work received few citations were just as widely diffused in 1961 as the papers of historically equal value published by more heavily utilized authors. On these top papers, the Matthew Effect would seem to have little influence on diffusion. Quality of work is by far the most significant determinant of early diffusion. The zero-order correlation between the number of citations these "super" papers received in 1966 and 1961 was .80.

Since it is often difficult to specify the one paper in which a discovery is presented, and since discoveries are often communicated in a series of papers, we wanted to look at the effect of stratification on the reception of all of a scientist's work. As in the case throughout the analysis, we were predominantly concerned with the reception of work of relatively high impact. Therefore, we have excluded from analysis those physicists who received fewer than twenty citations in 1966 to all their work published between 1950 and 1961.

The question is how widely diffused was the same work in 1961, a point in time closer to its publication? The data are presented in table 5 and indicate that the more eminent a physicist was in 1961, the more widely his work was diffused. Prestige of highest award, number of awards, and rank of academic department are all correlated with the total number of citations received in 1961. Furthermore, these correlations hold up when we take into account the variation due to differences in quality of work by controlling for the number of citations received in 1966 by pre-1961 work. These findings contrast sharply with those reported above. While the Matthew Effect had little independent influence on the reception of single papers, it does influence the utilization of the

[22] Still another methodological problem that we encountered in these studies was our inability to locate many authors in *AMS*. We did a spot check on a sample of names that we could not locate and found that most of them were either foreign scientists or young scientists whose names had not yet found their way into *AMS*. In our study of papers receiving thirty or more citations in 1966, we excluded all those authors who could not be located in *AMS*.

whole body of a physicist's work. Since we know that the Matthew Effect had negligible influence on the reception of the "best" paper of the university physicists (see table 4), we can conclude that the partial r's of table 5 are a result of slight but cumulative citations to the physicist's "lesser" papers. We reach the tentative conclusion that the reception of top papers will not be influenced by a scientist's position in the stratification system, but that high-ranking scientists are more likely to accumulate citations to their work of relatively small significance. Good papers do not need the Matthew Effect to attain visibility, but less significant papers benefit from it.

The consequences of the Matthew Effect in this case depend upon a question we have not yet considered: who are the early and late citers of the work under consideration? The papers generally followed a pattern

TABLE 5

CORRELATION AND PARTIAL CORRELATION COEFFICIENTS BETWEEN EXTENT OF DIFFUSION OF A PHYSICIST'S WORK AND SEVERAL STRATIFICATION VARIABLES (UNIVERSITY PHYSICIST SAMPLE)

Stratification Variable	Correlation with Extent of Diffusion*	Partial Correlation with Extent of Diffusion, Controlling for Quality†
A *N* honorific awards (1961)	34	26
B Prestige of highest award (1961)	32	25
C Rank of academic department	24	17

* Extent of diffusion is measured by the total number of citations in 1961 to all the physicist's work
† Quality is measured by the total number of citations in 1966 to work published prior to 1961

of increasing diffusion. Who are the men who used a paper in 1966 but did not use it in 1961? If, in fact, the scientists producing the best work in the subject area of the paper knew of the work in 1961 and used it, then the limitation of diffusion due to the author's rank is likely to have little effect on the advance of the field. If, on the other hand, a substantial number of top scientists do not learn of the work and do not make use of it soon after it is published, then the operation of the Matthew Effect in this case may be dysfunctional for scientific advance. These data point to the next step in the analysis of the communication system of science. A study of the structural bases of awareness in science showed that knowledge flowed smoothly throughout the social system of physics; good work was known about equally to physicists in all parts of the system (Cole and Cole 1968). Recent work by Jonathan Cole (1968) showed there were more substantial differences in the utilization of science. Men located at the top levels of the stratification system are more likely to

make use of high-quality science than those located at the lower levels. We are currently investigating changes in patterns of utilization over time. Who are the men who will make immediate use of scientific work destined to be heavily utilized? What kind of scientists use a discovery only after it has been recognized by others? In short, what roles are played by different types of scientists in the life history of a discovery?

THE RETROACTIVE EFFECT

So far we have analyzed the importance of the Matthew Effect in the early recognition of discoveries and in their wide diffusion. The Matthew Effect may also serve to focus attention *retroactively* on work of men who go on to become eminent.[23] To examine this aspect of the Matthew Effect we use the study of citations to the work of university physicists. We took all men who were thirty-five or younger in 1961 and counted the number of citations that their pre-1961 work received in 1961 and in 1966.[24] We also counted the number of citations in the 1966 index to work published between 1962 and 1966. We then reversed the procedure of the earlier analysis in which we controlled for citations at time 2 and looked for variations in citation at time 1. Here we controlled for assessed quality at time 1 and looked for variation in citation at time 2. The independent or stratification variable is the number of citations received in 1966 by work published between 1962 and 1966. This procedure basically allows us to control for assessed quality of work at time 1, split up our sample into those who became more successful after time 1 and those who did not, and finally look at the assessment of the quality of *early* work at time 2. The data indicate that work which is originally cited an equal number of times in 1961 is not cited equally in 1966. *The men who went on to publish important work after 1961 experience sharp increases in citation to their earlier work.* On the other hand, those scientists who do not go on to publish important work see a decline in the number of citations to their early work.[25] The zero-order correlation between citations in 1966 to pre-1961 work and citations in 1966 to recent work (1962-66) is .47. When we "control" for the number of citations the early work received in 1961 we get a partial correlation of .25.

[23] Merton (1968) points this out in the situation of retroactive recognition of the role of a junior scientist in collaboration: "Should the younger scientist move ahead to do autonomous and significant work, this work *retroactively* affects the appraisals of his role in earlier collaboration" (p. 58).

[24] We limited our study to young scientists because we did not think that continued success would bring about a retroactive interest in the work of someone who was already quite well known at the time of publication of his early work. If such an increase were found, it would be difficult to attribute it to the retroactive aspect of the Matthew Effect.

[25] This conclusion is, of course, not based on the correlation or partial correlation statistics since these tell us nothing about specification or interaction effects. The

One possible interpretation of these data is that the scientific community is merely making ceremonial citations to the early work of colleagues of new prominence. This seems unlikely; for ceremonial citations might be better made to the more recent work of these men, the work which has elevated their reputation. It is more likely that the audience is actually going back and reexamining the early work of men who had more recently produced outstanding and recognized contributions. It is quite possible that a physicist's later work has made his earlier work more relevant. Often scientists refer in their papers to earlier work. This earlier work may, from a purely substantive point of view, become more significant as it is developed. If this were true, then the increased rate of citations to early work may not be a result of the current location of the author in the stratification system but be a result of a real increase in the "quality" of the work. This leads to the perhaps obvious conclusion that a judgment of the quality of scientific work is time bound. Work can improve or deteriorate with age.[26]

RESISTANCES OR DELAYED RECOGNITION

We have been examining the impact of stratification on the diffusion of scientific ideas. There is one special case of delayed diffusion that merits our consideration, that is, resistance to scientific discoveries. Historians and sociologists of science have frequently noted that important discoveries are sometimes ignored and at other times actively resisted (Murray 1925; Barber 1962; Merton 1963). Unfortunately, it has been difficult to collect the kinds of data necessary for systematic study of this phenomenon. The data on citation patterns over time can be used as the first step toward such a systematic study. We can operationally define re-

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conclusion is based upon the tabular treatment of the data presented here:

MEAN NUMBER OF CITATIONS IN 1966 TO PRE-1961 WORK BY THE NUMBER OF CITATIONS THE SAME WORK RECEIVED IN 1961 AND THE NUMBER OF CITATIONS IN 1966 TO THE AUTHOR'S WORK PUBLISHED BETWEEN 1962 AND 1966 (UNIVERSITY PHYSICIST SAMPLE—35 YEARS OF AGE OR LESS)

	Number of Citations in 1966 to Work Published 1962-66	Mean Number of Citations to Pre-1965 Work in				Number of Men
		1961	1966		Difference	
Heavy early citations (10 or more)	50 or more	26	46	=	+20	20
	49–10	24	24	=	0	38
	9–0	21	8	=	−13	29
Light early citations (0–9)	50 or more	3	27	=	+24	11
	49–10	2	12	=	+10	120
	9–0	2	2	=	0	380

[26] I thank the *American Journal of Sociology* reader for pointing out this alternative interpretation of the data on the "retroactive" effect.

sistance—or, as we prefer to term the phenomenon, delayed recognition[27] —as those cases in which papers published prior to 1961 received a substantial number of citations in 1966 and few or no citations in 1961. This procedure is, of course, dictated not by the requirements of ideal design but rather by the availability of data. Ideally there should be a longer period of time between the two measurements of impact. However, we must also note that five years now probably sees more science come and go than did fifty years in the nineteenth century—the favorite hunting ground for collectors of cases of resistance.

Noting then that the design is less than ideal, let us estimate the frequency of delayed recognition and analyze some of its sociological sources. In order to identify cases of delayed recognition, we must limit ourselves to work which is indeed recognized at time 2. The sample, therefore, consists of 10 percent of the papers from all the fields of science (in the *SCI*) published prior to 1961 and receiving ten to twenty citations in 1966, and all those papers published prior to 1961 which received thirty or more citations in 1966. This sampling procedure yielded a list of 587 papers. Of these 587 papers, 74 or 13 percent received three or fewer citations in 1961. These papers that received at least ten citations in 1966 and three or fewer in 1961 shall be considered to have received delayed recognition. First, let us note that delayed recognition is relatively rare. On the basis of our sample we estimate that there are only 380 papers in the scientific literature published prior to 1961 that received ten or more citations in 1966 and three or fewer in 1961. Apparently the evaluation and communication system of institutionalized science operates so that only a relatively small number of papers that later turn out to be significant are overlooked at the time of their publication. Despite the rarity of the occurrence, we still wanted to investigate the sociological sources of delayed recognition, as information on deviant cases sometimes also provides knowledge on normal occurrences.

Bernard Barber (1962) suggests several possible conditions making for delayed recognition. He begins his analysis by showing that new concepts and methodologies which are opposed to existing scientific ideas are often resisted. This type of resistance may not be entirely contradictory with science's self-ideal. Skepticism about new ideas until they have been fully developed and adequately demonstrated falls well within the approved value system of scientists. Also, delayed recognition of ideas truly ahead of their time does not imply any sociological influences on science's development. In order to demonstrate the existence of an element of "irrationality" in the evaluation system of science, it is necessary to show

[27] Delayed recognition would seem to be a more inclusive term than resistance. The latter implies a conscious rejection by a scientific audience. Many of the cases given of resistance do not involve any conscious rejection but rather a simple ignoring of work. Delayed recognition describes a phenomenon of which resistance is a special case.

that "resistance" is not randomly distributed, that the work of low-ranking men is disproportionately overlooked. This is, in fact, one of Barber's major hypotheses and of direct relevance for our major theme: the significance of professional standing for the reception of a scientist's work.

Barber suggests that "sometimes, when discoveries are made by scientists of lower standing, they are resisted by scientists of higher standing partly because of the authority the higher position provides" (1962, p. 550). He then goes on to give examples of the work by young and little-known scientists that are being ignored. Among these were the mathematician Niels Abel, the mathematician Ohm, and the geneticist Mendel. He also suggests that sometimes "men of higher professional standing sit in judgment on lesser figures *before* publication and prevent a discovery's getting into print" (1962, p. 552).

Barber's paper was a major contribution because it brought to our attention a problem that has itself experienced delayed recognition. However, recent research leads us to question the relevance for modern science of this type of delayed recognition. Indeed, it is possible that the sociology of science may be hampered by an overdependence on historical material. In the study of an area of human activity that has grown and progressed so rapidly as has science and has experienced such rapid institutionalization in the twentieth century, we may misallocate our research effort by assuming that phenomena of past significance are still important. Let us first consider the possibility of a decent piece of science going unpublished. We know from the work of Zuckerman and Merton (1968) that most journals in the hard sciences publish a majority of the papers submitted to them. The *Physical Review* publishes approximately 80 percent of submitted papers. The editors of these journals tell us that rejections are limited predominantly to work that is not "plausible." When we couple these high acceptance rates with the knowledge that the average papers published by the best journals are of relatively low quality and the fact that there are so many scientific journals, we may conclude that the chances of any truly valuable scientific work being refused publication are so slight as to make the problem of limited sociological relevance.

Now let us consider what we might call the "Mendel case," where a significant discovery is published and then ignored, to some extent as a result of the author not having a high status in science.[28] We suggest that this case is almost as unlikely to occur as the case of nonpublication. First, we would be unlikely to find a contemporary "Mendel" working in an obscure monastery; modern day "Mendels" would be in a university science department, or a government or industrial laboratory. Also we

[28] As Barber (1962) points out, Mendel was resisted because of his low professional standing and also because his ideas were considerably ahead of his time.

know from previous work that the evaluation system of science operates so efficiently that most "Mendels" would be in the top university departments (Cole and Cole 1967). We would suggest that modern science gives such great indications of universalism and rationality that the only cases today of important discoveries going unrecognized for more than a few years would be those cases of delayed recognition for truly intellectual reasons—that is, the discoveries that are truly ahead of their time.

We hypothesized that delayed recognition in modern science was either solely the result of the content of the discovery or partly influenced by differentials in visibility of the author that would lead to short-term delays in the recognition of a minority of important discoveries. The data are presented in table 6. They suggest that the content of papers is probably more important than the social characteristics of their authors in bringing on delayed recognition. Delayed recognition papers are no more likely to be written by young men than are papers receiving immediate recognition. Likewise, institutional location and number of honorific awards both fail to distinguish the authors of delayed recognition papers from those not experiencing delayed recognition. The only variable which did make a significant difference was the number of citations to the author's other work at the time of publication. This finding is consistent with those presented above and once again emphasizes our conclusion that the more one's past work is being used, the higher the probability of new work being quickly recognized and diffused.

CONCLUSIONS

Let us briefly summarize the major conclusions of this set of investigations. Perhaps most important, we have shown that modern physical and biological science does approach its ideal of universalism in the reception of scientific discoveries. All the data indicate that the assessed quality of papers at time 2 is a far more important determinant of the paper's initial reception at time 1 than is the author's rank in the stratification system at time 1; significant work tends to be utilized regardless of who has produced it. We would suggest that only a small fraction of significant work is overlooked for more than a few years. Among those papers experiencing delayed recognition, many seem to do so on account of their content and not on account of the author's location in the stratification system.

The Matthew Effect, as we have used the concept, stands for the influence of all aspects of stratification on the reception of scientific ideas. When the quality of work is controlled, the Matthew Effect can be seen to have a greater influence on the extent of diffusion of a scientist's complete work than on any particular paper. Good papers have a high probability of being recognized regardless of who their authors are; but lesser papers written by high-ranking scientists are more likely to be widely

diffused early than are lesser papers by low-ranking authors. The Matthew Effect also serves to focus attention on the work of little-known men who collaborate with high-repute scientists, and possibly to retroactively increase the visibility of the early work of scientists who go on to greater fame. The generalization of the concept of the Matthew Effect has led us to raise questions about its functional consequences for scientific advance. When the Matthew Effect is applied to all discoveries of equal quality, we can see that it may result in temporarily ignoring some significant discoveries. This research points to the need of a more com-

TABLE 6

DISTRIBUTION OF AUTHORS OF DELAYED RECOGNITION PAPERS AND OTHERS (SAMPLE OF PAPERS FROM ALL FIELDS INCLUDED IN *SCI* HAVING 10 OR MORE CITATIONS IN 1966)

Characteristics of Authors	Delayed Recognition Papers*	Other Papers
Age:		
40 or under	14%	15%
41–50	38	45
51–60	26	22
Over 60	22	17
	100%	99%
	(58)	(419)
Institutional location:		
Academic departments (distinguished and strong)	43%	48%
Academic departments (all others)	19	21
Nonacademic	28	28
Retired	10	3
	100%	100%
	(58)	(419)
Number of honorific awards:		
0	36%	41%
1 or 2	24	23
3 or more	40	37
	100%	101%
	(58)	(419)
Scientific repute (*N* citations to work in 1961):		
100 or more	16%	27%
99–20	32	49
19–0	52	24
	100%	100%
	(74)	(513)

* Delayed recognition papers are those which received 10 or more citations in 1966 and 3 or fewer citations in 1961.

plete exploration of not only the conditions under which the Matthew Effect operates but also the conditions under which it is functional, dysfunctional, or nonfunctional for scientific advance.

Finally, we suggest that there is possibly greater *sociological* discontinuity between little science and big science than we have assumed in the past. The sociology of science has developed predominantly as an offshoot of the history of science. The leaders of the specialty were either trained as historians or began their sociological investigation with historical topics. It is therefore natural that latecomers to the field have been influenced by problems and perspectives which emerged from historical analysis. Recent research, however, suggests that the social organization of science has changed so drastically in this century that there may be real discontinuities between what science as a social institution is today and what it has been in the past. It is possible that resistance to scientific discovery is not a significant problem in contemporary science. It is not our purpose to suggest that sociological investigation of the historical development of science is of limited value. On the contrary, we would like to suggest that historical investigation is of great value if put in proper perspective. Certainly there is an overwhelming need for sophisticated studies of the processes of institutionalization. However, we are suggesting that when studying the current social organization of science we may be misled by use of historical examples or the assumption that past problems are also current ones.

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Stayers and Movers[1]

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A new model for inheritance in intergenerational mobility is developed and related to mover-stayer models of intragenerational mobility. Application is made to data for the United States, Britain, and Denmark. Predictions are required to match observed proportions of men remaining in their origin strata and also the observed distribution of men among destination strata.

Insight into the complexities of social dynamics is enhanced by exploring the variety of mobility models which have been put forward, all with some success, in the past two decades. A focus on mobility protects one from facile acceptance of patterns discerned in data on social structure. It calls for some approach to specification and causal understanding of processes underlying the patterns. A number of different combinations of postulates have been proposed.

Here a simple new model is developed which relaxes a restrictive assumption in an earlier model of inheritance effects in intergenerational mobility so that the model can also be applied to intragenerational data and be related to the mover-stayer models introduced by Blumen, Kogan, and McCarthy (1955). The modified model is applied to U.S. data from the recent study by Blau and Duncan (1967), as well as to less-refined data from earlier surveys in Britain (Glass 1954) and Denmark (Svalastoga 1959). The modified model estimates the degree of "inheritance" in each category, and it is more consistent with the decentralized nature of mobility in large societies.

In all the models discussed men are cross-classified by their occupational category at two different times. Inheritance refers to a tendency of men to remain in their initial category, and thus to appear in cells on the diagonal of the cross-classification. Savage and Deutsch (1960; also see Goodman 1963, 1968) showed how to exclude diagonal cells, in which zero entries are logically required, when calculating trade expected among various countries given only their total exports and total imports. White (1963) calculated expected entries in mobility cross-classifications for given marginals when entries in *any* subset of cells are held fixed at observed values, and concluded, with prestige strata as the categories, that fixing entries in corner cells (the barring of large jumps in status) led to much poorer fits in the remaining free cells than when diagonal cells were

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fixed (stipulating inheritance effects). Goodman (1965), from a statistical perspective, developed similar inheritance models without assuming ordered categories, and later (1969) generalized and extended his models. McFarland (1968) applied a different statistical perspective to inheritance models.

All these inheritance models, plus the new one developed below, treat closed systems, that is, fixed populations of men and, implicitly, of jobs. Since column marginals do not in general equal row marginals, jobs are also assumed in effect to move between categories. Categories need not be ordered, as by prestige. All the inheritance models also allow for the marginals of the cross-classification (the sums of rows and of columns) being determined by exogenous forces; early Markov models (Prais 1955) treated column marginals as dependent variables. The statistical models simply eliminate the importance of marginals by focusing on interaction measures which are independent of marginals.

Blumen et al. (1955) early noted a problem with simple Markov models of mobility: large fractions of the population remained much longer in their initial categories than could be allowed by the models. They proposed that the population be treated as if it were split into two groups (not directly observable), one which never moved and one which moved according to a Markov chain. The new inheritance model, like the mover-stayer models, does not assume that all men who remain in their initial categories inherit their positions. Some fraction, different for each category, does, but the others are assumed to end up there through participation in a random, egalitarian mobility process.[2] The earlier inheritance model implies the existence of some powerful central agency able to fix the total entries in certain cells.

One can interpret the modified inheritance model and the mover-stayer models as reflecting limitations of opportunities to move rather than differences in motivations among individuals. Requiring column sums of predicted entries to equal the observed sums is then more than a convenience in estimation; it says there can only be as many men in a category as there are available jobs. Stayers are men never exposed to an opportunity to move. To carry through this interpretation fully one must open the system to flows of men and jobs, in and out; White (1970) does this, but only for subsystems, not for entire national systems.

A MODIFIED INHERITANCE MODEL

Consider a cross-classification of men among s occupational categories by their own locations (columns) and their fathers' (rows). Instead of

[2] The new model could easily be adapted for preassigning men to some other set of cells, not necessarily all or any on the diagonal. Goodman (1968) has generalized his inheritance model in this way and indeed he (1965) uses "inheritance" as a generic term for fixed cells.

fixing the total number of entries in a diagonal cell, stipulate only that a certain fraction of the men in row i are bound to their fathers' category. The remaining fraction of men of that background are free to move at random into any cell including the diagonal cell, subject only to the constraints imposed by fixed marginal sums for rows and for columns. Equations predicting cell entries for the modified model are much simpler to derive than for the original model of inheritance (White 1963).

Let the observed number of sons whose fathers were in stratum i and who themselves are in stratum j be denoted by A_{ij}. Denote the row sum over the s columns by $A_{i.}$, the column sum over s rows by $A_{.j}$, and the grand total by A. It is more convenient to work with numbers than with fractions in deriving predictions from the model, and it is easier to focus on movers. Let a_i be the (unobserved) number of sons with fathers in stratum i who are free to move to any stratum, and a the total over all strata. By hypothesis the numbers of sons in various strata free to move are distributed among cells without bias, as they would be in a society with perfect equality of opportunity, but subject to the constraints imposed by the fixed column marginals $A_{.j}$. Thus the expected number of free sons in each cell is calculated by the same formula used in a contingency table to calculate numbers expected on the null hypothesis of no association. Call this expected number a_{ij}:

$$a_{ij} = \frac{a_i \, a_{.j}}{a} . \tag{1}$$

Let the expected total number of sons in each cell according to the model be $\bar{A}_{ij}$; then

$$\bar{A}_{ij} = \begin{cases} a_{ij} & \text{for} \quad i \neq j . \\ a_{ii} + (A_{i.} - a_{i.}) & \text{for} \quad i = j . \end{cases} \tag{2}$$

It is easy to verify that these expected total numbers sum to the observed marginal totals for rows and columns, whatever the values of the $a_{i.}$ are. The observed column marginal for stratum j may be written as the row marginal for that stratum plus an observed difference D_j:

$$A_{.j} \equiv A_{j.} + D_j , \tag{3}$$

where D_j may of course be negative. It follows that

$$a_{.j} = a_{j.} + D_j ; \tag{4}$$

so only the s row sums are free parameters.

There is a free parameter, a_{i}, for each of the s strata. These parameters could be chosen so as to minimize some criterion of overall mismatch between the observed and the expected tables, subject to the constraint of fixed marginals. Instead the s parameters will be chosen so as to achieve a perfect match, if possible, between the expected and observed entries

in just the s diagonal cells. A useful by-product of matching only on the diagonal is achieving near-perfect comparability with predictions from the original inheritance model (White 1963), where the observed total entries in the diagonal cells were taken as given, along with the column and row marginals. The main reason for choosing parameters so as to match entries in diagonal cells is substantive. The only discriminatory factor assumed operating in the mobility process is some kind of inheritance. The model should account accurately for at least the most direct effects of inheritance, the sizes of the diagonal entries. If this perfect fit along the diagonal is possible, deviations from predictions then occur only off the diagonal, and are a measure of the adequacy of inheritance as the sole discriminatory factor. The main result of applying the model to actual data,[3] with this choice for fitting parameters, will be to disallow inheritance in some strata.

The row sums $a_{i.}$ are determined by equating predicted and observed entries in the diagonal cells:

$$\bar{A}_{ii} = A_{ii} , \tag{5}$$

subject to the obvious constraints:

$$a_{i} \leq \min [A_{i.}, A_{.i}] , \quad \text{and} \tag{6}$$

$$a_{i.} \geq \max [0, -D_{i}] . \tag{7}$$

Equation (5) can be written in terms of the $a_{i.}$ and the sum a, using equations (1), (2), and (4):

$$\frac{a_{i.}(D_{i} + a_{i.})}{a} + A_{i} - a_{i} = A_{ii} . \tag{8}$$

Equation (8) defines a set of mixed quadratic equations, coupled through the sum a, which usually cannot be solved explicitly.[4] An algorithm is needed. Guidance can be obtained by solving special cases. Linear inequalities like (6) and (7) must also be satisfied by an acceptable set of $a_{i.}$; so the problem is akin to ones in quadratic programming.

There is one degenerate case, tables with two strata, $s = 2$. If equation (8) is expanded, terms collected, and the identity

$$D_{1} = A_{21} - A_{12} \tag{9}$$

[3] The actual data come from sample surveys Minimization of the effects of sampling variability on estimates is a reasonable goal, but entries are always largest along the diagonal so that there is little loss.

[4] One can see directly from the equation that multiplication of every a_{i}, A_{i}, and D_{i} by the same constant does not change the equations of (8) (by linear homogeneity); so use of sample survey data is legitimate.

is used, the same equation results both for $i = 1$ and $i = 2$:

$$a_1 a_{2.} = A_{21}a_{1.} + A_{12}a_{2.} . \tag{10}$$

Instead of a unique solution for the parameters, there can be a whole continuum of pairs of row sums, $a_{1.}$ and $a_{2.}$, which match predicted to observed diagonal entries A_{ii}.

The reason for degeneracy in the 2×2 case is obvious. In a table of s rows and columns, when the marginals are fixed there are only $(s - 1)(s - 1)$ degrees of freedom left to the entries in the table. Although there are two parameters in the modified inheritance model, $a_{1.}$ and $a_{2.}$, only one independent matching condition results from equation (5). With more than two strata in a table there are as many independent matching conditions in equation (5) as there are parameters a_i. Any observed mobility table can be reduced to 2×2 by collapsing categories, and tables quite different in detail appear the same in this collapsed form. So little of the original structure remains that the one-dimensional locus of solutions $\langle a_{1.}, a_{2.} \rangle$ given by (10) is scarcely a surprising degeneracy.

There are some possible 2×2 mobility tables not consistent with any modified inheritance model: consider the case where $A_{12} = A_{21} = 10A_{11}$. In the original inheritance model the total entry in a diagonal cell is fixed at the observed value and the model always can be applied. Since any model should be refutable under at least some circumstances, the modified inheritance model is more satisfactory for 2×2 tables.

Equation (8) can be solved exactly, for any number of strata, when each row sum equals the corresponding column sum and the sum of off-diagonal entries is the same in every row. Define

$$e_i \equiv A_{i.} - A_{ii} . \tag{11}$$

If $e_i = e$ and $D_i = 0$ for all i, equation (8) is simplified:

$$a_{i.}^2 + (e - a_{i.})a = 0 . \tag{12}$$

But this equation is identical in form for every i; so the a_i must all be equal, and $a = sa_i$, where s is the number of strata. Hence an explicit, unique solution for each $a_{i.}$ is possible:

$$a_{i.} = \frac{s}{s - 1} e ; \quad \text{and} \tag{13}$$

$$a = \frac{s^2}{s - 1} e . \tag{14}$$

The upper bounds, $a_{i.} \leq A_{i.}$, will not be satisfied if $e > [(s - 1)/s]A_{i.}$ for some i, that is if $A_{i.} > sA_{ii}$. As in the degenerate case of two strata, there are some tables whose (diagonal) entries cannot be fitted by any modified model of inheritance. But if the diagonal entries of the observed sym-

metric table can all be matched by predictions, there is a unique set of parameters $a_{i.}$.

In the general case, assume an initial trial value for a, call it $a(o)$. For each value of i, equation (8) can be solved as a simple quadratic equation in terms of $a(o)$:

$$a_{i.} = \tfrac{1}{2}\{a(o) - D_i \pm \sqrt{[a(o) - D_i]^2 - 4e_i\, a(o)}\} . \qquad (15)$$

The expression under the radical should be positive, since only real numbers are meaningful as row sums. When the D_i are small, as in most applications, this corresponds roughly to $a(o) > 4e_i$. Any sensible trial value for a should be large enough to preclude complex radicals. Next, sum equation (15) over all values of i: in shorthand,

$$\sum_{i=1}^{s} a_i = \tfrac{1}{2}\Big[sa(o) + \sum_{i=1}^{s} (\pm\sqrt{\quad})_i \Big] . \qquad (16)$$

The left side should be equal to $a(o)$ if $a(o)$ is the correct value; otherwise the left side can be used as a new trial value $a(1)$. However, until the sign of each radical is determined, the sum on the left has many possible values.

In some mobility tables the observed parameters will satisfy the following chains of strong inequalities:

$$|D_i| \ll e_i , \qquad (17)$$

and

$$e_i \ll A - \sum_{j=1}^{s} A_{jj} , \qquad (18)$$

for each i. The first condition is approximate symmetry, and the second condition is satisfied if no one stratum contains a large fraction of the total population. Equation (18) implies

$$e_i \ll a , \qquad (19)$$

for any acceptable model of inheritance. Equation (15) is valid for the (unknown) correct value of a, and it can be rewritten:

$$a_{i.} = \frac{a}{2} \left\{ 1 - \frac{D_i}{a} \pm \left[\left(1 - \frac{D_i}{a} \right)^2 - \frac{4e_i}{a} \right]^{1/2} \right\} . \qquad (20)$$

Each fraction is much less than unity in magnitude, by (17) and (18); so an expansion of the radical by the binomial theorem will converge:

$$a_{i.} = \frac{a}{2} \left\{ 1 - \frac{D_i}{a} \pm \left(1 - 2\frac{e_i}{a} - 2\left(\frac{e_i}{a}\right)^2 - \frac{D_i}{a} - 2\frac{D_i e_i}{a^2} + 0\left[\frac{e_i^3}{a^3}\right] \right) \right\} . \qquad (21)$$

The terms in the expansion are arranged in order of descending sizes, approximately, and the notation 0 $[x]$ indicates that each of the terms not shown is of the order of x or smaller (de Bruijn 1961, p. 14).

Suppose now the D_i are all actually zero, and the e_i are all equal as well as small. Then equation (13) applies, and it must be approximated by equation (21). The negative sign must be chosen for the rádical, for then (21) becomes

$$a_{i.} = \frac{a}{2}\left\{2\frac{e}{a} + 2\left(\frac{e}{a}\right)^2 + 0\left[\left(\frac{e}{a}\right)^3\right]\right\}. \qquad (22)$$

If only the first term in the bracket is used, then a_i equals e, a good approximation to equation (13).

By the principle of analytic continuity (Ahlfors 1966, p. 279; Rubin 1966, pp. 210, 312), the minus sign must be chosen for the radical in equations (20) and (15) for each value of i, even when $D_i = 0$ and $e_i = e$ do not hold for any i. Even when (17) and (18) do not hold, the expansion in (21) can be a useful guide. When equation (21) is summed over all i, the result must equal a:

$$a = \frac{a}{2}\left[\frac{2}{a}\Sigma e_i + \frac{2}{a^2}\Sigma e_i^2 + \frac{2}{a^2}\Sigma D_i e_i + 0\left(\frac{\Sigma e_i^3}{a^3}\right)\right]. \qquad (23)$$

If the residual terms indicated are neglected, a quadratic equation in a results:

$$a = \tfrac{1}{2}[\Sigma e_i + \sqrt{(\Sigma e_i)^2 + 4(\Sigma e_i^2 + \Sigma D_i e_i)}]. \qquad (24)$$

Here the radical must have a plus sign, because if there exists a valid inheritance model for a table the value of a must be larger than Σe_i. The procedure for calculating parameters in the inheritance model, when restrictions (17) and (18) are satisfied by the observed table, is to compute a from (24) and thence the $a_{i.}$ from the exact equation (20) (using the minus sign). The sum of the latter, which will not quite agree with the a from (24), is used in the denominator of equation (1) for making the actual predictions of entries.

SOME APPLICATIONS

Intergenerational mobility data for Denmark and Britain are reported in tables 1 and 2, respectively. Shown in each cell are both the actual number of men and its ratio to the number expected by chance with the given marginals but without inheritance biases. Social strata in each case are grouped into the same three broad categories used in applying the earlier inheritance model (White 1963; and see Goodman 1965, 1968). The advantage of comparability with earlier work might seem to be offset by the difficulties of computation; with so few strata, condition (18) cannot be met and the difficult algorithm based on equation (15) must be used. However, for both countries there are single strata containing large

fractions of the population even when the most refined tabulation in the original data is used. Simply from inspection of equation (21) one sees that a must be larger than the largest off-diagonal sum e_i, whatever D_i is, if the equations (15) are to have real solutions. Yet an a this large proves to be inconsistent with the number of inheritors s_i required in other strata.

The main result is surprising: even though the observed entry in each diagonal cell is substantially larger than the chance expectation, in each table, no modified inheritance model can be fitted to predict all three observed entries on the diagonal. It is a laborious matter to establish a negative conclusion like this, and the calculations will not be reported.

TABLE 1

INTERGENERATIONAL MOBILITY AMONG OCCUPATIONAL PRESTIGE STRATA IN DENMARK

	MAN'S STRATUM AT TIME OF INTERVIEW			
FATHER'S STRATUM	1–6	7	8, 9	Total
1–6	685 (1 51)	280 (0 75)	118 (0 46)	1,083
7	232 (0 71)	348 (1 29)	198 (1 08)	778
8, 9	83 (0 37)	201 (1 09)	246 (1 97)	530
Total	1,000	829	562	2,391

NOTE.—In each cell are the number of men from the total sample who came from the background defined by the row to the current job status defined by the column. Below each number in parentheses is the ratio of this number to the number expected with no association and the given marginals. For definition of the strata (roughly, upper + middle, upper working, and lower working classes), see the source (Svalastoga 1959, p. 330).

TABLE 2

INTERGENERATIONAL MOBILITY AMONG OCCUPATIONAL PRESTIGE STRATA IN BRITAIN

	MAN'S STRATUM AT TIME OF INTERVIEW			
FATHER'S STRATUM	1–4	5	6, 7	Total
1–4	588 (1 71)	395 (0 85)	159 (0.48)	1,142
5	349 (0.76)	714 (1.16)	447 (1 02)	1,510
6, 7	114 (0 45)	320 (0 93)	411 (1.67)	845
Total	1,051	1,429	1,017	3,497

NOTE.—Conventions as in table 1; the source is Glass (1954, p. 183).

The negative result is not changed when changes are made in the set of social strata collapsed into the middle category.

The importance of the negative result is considerable. Inheritance as the only source of bias in mobility cannot account even for the observed numbers of men who remain in their fathers' categories, in the framework of the modified inheritance model. Yet this framework seems more meaningful than that for the earlier inheritance model. No concrete interpretation for the latter has been suggested, save the unreal one of planning by a central allocation authority. The modified model is consistent with a simple interpretation: specified fractions of the men in a stratum simply inherit their fathers' status and do not participate in the purely random competition for positions by the remaining men in the system.[5]

TABLE 3

PREDICTIONS FOR TABLE 2 WITH INHERITANCE RESTRICTED TO TOP AND BOTTOM STRATA

	MAN'S STRATUM		
FATHER'S STRATUM	1–4	5	6, 7
1–4	588	360	194
5	332	766	412
6, 7	131	303	411

NOTE.—None of the middle stratum, 38 percent of the top stratum, and 29 percent of the bottom stratum sons are assumed to inherit father's stratum. The remaining men are allocated randomly, subject to the observed marginal totals in table 2. Equation (8), for matching observed to predicted diagonal entries, is not applied to the middle stratum but is satisfied exactly for the other two.

Inheritance may be assumed to exist only in two of the three strata. The model is easily adapted. One observed entry in a diagonal cell, say A_{jj}, is not matched to the predicted entry by equation (5). The $a_{j.}$ there is set equal to $A_{j.}$. Equations (8) and (15), and, with obvious modifications, equation (16) apply. For both countries this limited model yields a perfect fit for the two predicted diagonal entries, whatever pair of strata is used. However, the fit of predicted to observed entries over all cells is worse, by any criterion, when the middle stratum is one of the two with inheritance. Table 3 shows the predicted entries for Britain when inheritance is assumed only in top and bottom strata. The overall fit is fairly good.

A thought experiment will clarify why the observed diagonal entries cannot all be matched in the modified model. Suppose every stratum is split into 100 parts and thus every cell into a fine mesh of subcells. Since data are lacking for such refined tabulations by occupations, assume that

[5] Even this interpretation is ambiguous, since the actual mechanisms by which the random competition and the inheritance could work are not specified.

each stratum is internally homogeneous: allocate the observed total in every cell among its subcells simply in proportion to the marginal sizes of the respective parts of strata. Approximation (19) will certainly apply for the parts of strata. The modified model can be applied successfully to match *all* entries in the diagonal subcells of the refined table. The unique solution is obtained from equation (21). But the diagonal subcells within a diagonal cell cover only a tiny part of the whole cell. Given the large size of the middle stratum in Britain and in Denmark, there is not a large enough number of middle-class sons staying in that stratum to justify the assumption that a fraction of them inherit their class position, as well as fractions of upper-class and of lower-class sons. The middle stratum either is homogeneous internally but with too little tendency to inheritance of class position, or has components with high self-recruitment but too little recruitment from other components.

The results of this thought experiment can be supported by an analysis of fresh data. Blau and Duncan (1967, p. 396) report for the United States a cross-tabulation of men by own occupational status in 1962 and by father's occupational status. Their sample is large enough, 20,700 men, to support a breakdown into seventeen categories rather than merely a few gross strata.[6] It proves possible to match all seventeen diagonal entries with predictions from the modified inheritance model

Table 4 reports the inheritance fractions, $1 - (a_i / A_{i.})$, which lead to precise match between observed and predicted entries in the diagonal cell for every category. The corresponding total number of movers, a, is 36,280 out of the total of 39,969 men.[7] The "no answer" category was included in the model, and as one would expect, the inheritance fraction there is almost exactly zero. Inheritance fractions vary erratically as one goes down the hierarchy of seventeen occupational categories. The fraction is highest for salaried professionals, but farmers are almost tied with self-employed professionals as the category with second highest amount of inheritance. Note the huge drop in number of farmers from the row sum to the column sum. Although less than 10 percent of the total

[6] The categories in this table are refinements of the ten major occupational groups of the U.S. Bureau of the Census. They are ordered as aggregates on the basis of median income and education, whereas the British and Danish studies assigned men to strata on the basis of prestige of individual occupations. Duncan has shown that prestige ratings of individual occupations from sample surveys can be predicted well from income and education data (which are preferable since they are available for the full range of occupations reported in the census), but there remains the difference between ordering individual occupations which are then grouped into strata versus ordering aggregates of occupations.

[7] The approximate value of a from equation (24) was 37,550. Several of the D_i were too large to satisfy inequality (17). Thus the accurate value of a was found by local search rather than by inclusion of further terms in the expansion in equation (23).

population is classified as inheritors in the model, these constitute 65 percent of the total entries in diagonal cells.

The predictions of the modified inheritance model are very poor off the diagonal. The reader can test a few himself using values of $a_{i.}$ and $a_{.j}$ from table 4 in equation (1). Predictions tend to be much too low in the sixteen cells immediately adjacent to the diagonal, whether those to the

TABLE 4

PARAMETERS IN THE MODIFIED INHERITANCE MODEL FOR INTERGENERATIONAL MOBILITY*

Occupational Category	Inheritance Fraction†	Number of Movers: By Row ($a_{i.}$)	Number of Movers: By Column ($a_{.i}$)	Predicted Diagonal Entry ($\hat{A}_{ii}$)
Professionals:				
Self-employed	.156	418.8	495.8	83
Salaried	240	926 0	3,773.0	388
Managers	.122	1,241.4	2,999.4	275
Salesmen, other	.101	699 5	1,173.5	101
Proprietors	.098	2,563.6	2,507 6	456
Clerical	023	1,227.5	2,419.5	111 5
Salesmen, retail	.010	665.2	612.2	18
Craftsmen:				
Manufacturing	.086	2,067.6	2,687.6	346
Other	.051	2,439.5	2,722.5	313 5
Construction	.095	1,749 4	1,776.4	268
Operatives:				
Manufacturing	086	2,778.3	3,712 3	546
Other	.050	2,504 1	2,893 1	331
Service	.050	1,634.3	2,098.3	180
Laborers:				
Manufacturing	.050	667.9	815.9	50
Other	.060	1,578.2	1,616 2	165
Farmers	.153	8,756 0	491 0	1,696 5
Farm laborers	078	963.9	595.9	98
No answer	− 006	3,397.5	2,888 5	251
Total	.092	36,279	36,279	5,677 5

* Applied to a cross-tabulation in Blau and Duncan (1967, p. 496).
† Defined as $1 - (a_{i.}/A_{i.})$.

left or those to the right. Because predicted entries are constrained to sum to the observed marginals, it follows that they are too high in the corners.[8]

A subsidiary use for the modified inheritance model is in assessing dispersion of the intergenerational flow of manpower. Blau and Duncan (1967, p. 44) use Goodman's version (1965) of the original inheritance model to block out diagonal cells when computing the proportion of sons

[8] There are many exceptions to the pattern which could be interpreted in terms of similarities between industrial settings of categories of jobs not close in socioeconomic status.

from a given origin whose 1962 occupation would have to be changed in order to yield the same distribution as for the total population in 1962. They argue that the measure of dispersion should be independent of the degree of inheritance. But not all the men in diagonal cells can reasonably be thought of as inheritors. It would seem more appropriate to calculate dispersion from the matrix of entries for movers only, that is, the a_{ij} derived from the modified inheritance model. One would sum the magnitude of the differences between $a_{ij}/a_{i.}$ and $a_{.j}/a$ for all j.

The price paid for sufficient refinement of categories to allow inheritance to exist simultaneously in each category, within the framework of the modified inheritance model, is poor prediction in cells off the diagonal. If some form of bias in addition to inheritance were introduced, the inheritance fractions would necessarily be affected, given fixed marginals. The inheritance model is most informative when used with a few gross strata, as in the tables for Britain and Denmark, for then tendencies above chance to move to jobs fairly similar in status, at the high and low ends, are included in the inheritance bias. But inheritance cannot be assumed in all three strata, for the indirect effects of inheritance bias in high and low strata are more than sufficient to account for the apparent tendency toward inheritance seen in the middle stratum.

Goodman (1965, 1969) has concluded that a model with inheritance (and/or disinheritance) assumed in all strata is preferable, for the Danish and British data, to one with inheritance stipulated only in upper and lower strata. His argument essentially was the greater likelihood, in the technical sense of statistical inference, of drawing a table no more divergent than the observed sample table from a hypothesized population table when all three diagonal cells were fixed than when two diagonal cells were fixed.[9] White (1963) argued that fixing only two diagonal cells in the original inheritance model was preferable on theoretical grounds.[10] In the earlier article (1965) Goodman asserts only that all three diagonal cells should be treated as fixed at the observed sizes; in the later article (1969) he explicitly identifies the middle stratum with a disinheritance effect. The difference in emphasis results from Goodman's urging, in the later article, use of a different kind of interaction measure as the best way to assess inheritance tendencies in a given stratum. Perhaps the moral is that statistical sampling theory is not really relevant to choosing between models.

[9] The basic equations in Goodman's (1965) model (eqq. [22] and [13]) are the same as equation (15) in White (1963) save for a multiplicative constant. The row and column parameters are estimated in the same way in each model. Goodman refers to his model (p. 569) as one in which the marginal frequencies are not fixed, but this simply means he allows for sampling variability: his estimates of parameters are all based on the observed row and column marginal distributions.

[10] See especially the second paragraph on p. 25 in White (1963).

MOVER-STAYER MODELS

Blumen, Kogan, and McCarthy (1955) dealt with time series of moves by closed populations[11] among a set of unordered categories. They begin by assuming that the moves of an observed subpopulation of workers among industrial categories are described by a Markov chain. Predictions of long-term turnover were used as the main test of the model. The basic Markov property was found to be violated,[12] "the longer a group of workers has been continuously employed . . . in an industry code group in a following quarter" (p. 104).

The mover-stayer model is an attempt to rescue the Markov chain. Each population is split permanently into stayers who remain attached to an industry with probability unity and movers describable by a Markov chain. At each quarterly transition some of the movers remain in the initial category; so the numbers of stayers and of movers are not directly observable.

Let s_i be the fraction of workers in industry i who are stayers, let S be the diagonal matrix with these entries, and let P be the matrix of transition probabilities for the movers. A matrix T describing turnover in one quarter can be constructed:

$$T = S + (I - S)P \,. \tag{25}$$

A matrix $T^{(t)}$ describing turnover across t quarters must then be

$$T^{(t)} = S + (I - S)P^t \,. \tag{26}$$

In a Markov chain, $T^{(t)}$ would be simply the tth power of the one-quarter turnover matrix, T. Blumen et al. estimate the unobservable S from the behavior of P^t when t is large and from the observed $T^{(t)}$. They then derive P from equation (25) using the observed value of T.

The mover-stayer model suggests a reformulation of the modified inheritance model to apply to moves within men's own careers. Treat a population of men cross-classified by strata of the first job and current job as if it had entered as a cohort t units earlier and had then moved year by year among strata in a closed system according to a mover-stayer model. An observed table of intragenerational mobility, whose entries will be denoted by A_{ij}, corresponds to the long-term turnover

[11] Their decision to close the system (Blumen et al. 1955, p. 62) is natural in view of the short span of three years chosen for their social security sample. A consistent mathematical interpretation of closing an absorbing Markov chain is given in section 6.2 of Kemeny and Snell (1959); it is not clear what interpretation Blumen et al. use (see their section 7.3.3).

[12] It should be noted that Blumen et al. (1955, p. 156) are skeptical about the relevance of tests of statistical significance in this kind of model construction. It should also be noted that they propose a variety of other reformulations in chap. 7, many of which have yet to be exploited.

matrix $T^{(t)}$ in equation (26) applied to the initial distribution of men among strata. The ambiguity in the model is the value of t, the number of effective time units for the table.

Let M represent the matrix of turnover fractions among movers across the span in the table: if P and t were known,

$$M = P^t . \tag{27}$$

In the modified inheritance model the column sums are fixed constraints which must be satisfied. If $a_{i.}$ is, as before, the number of movers in stratum i, then

$$(A_{i.} - a_{i.}) + \sum_{k=1}^{s} a_{k.} M_{ki} = A_{.i} , \tag{28}$$

where the term in parentheses specifies the number of stayers. Since the vector of the $a_{i.}$ times the matrix M is simply the vector of column marginals for movers, equation (28) is analogous to equation (4); it can be written in vector form as

$$a(I - M) = -D , \tag{29}$$

where a is the row vector whose kth component is $a_{k.}$, and where D is a column vector containing the D_i defined in equation (3).

Numbers of movers are chosen so as to match predicted with observed entries on the diagonal. Expressed in component form as in equation (8), the conditions for matching become

$$(A_{j.} - a_{j.}) + a_{j.} M_{jj} = A_{jj} . \tag{30}$$

Here M_{jj} plays a role analogous to $1/a$ in equation (8). The solution is trivial (since mutual coupling among different rows is buried in M_{jj}),

$$a_{j.} = \frac{A_{j.} - A_{jj}}{1 - M_{jj}} . \tag{31}$$

In the mover-stayer model, Blumen et al. assume that when t is twelve quarters, the power P^t is near the equilibrium matrix for a constant Markov chain: that is, a matrix in which every row is the same probability vector. Although the exact meaning of t is ambiguous in the intragenerational model, its value should be large enough to justify the same assumption. That is, M should be a matrix in which each row is the same; denote it by a vector m. Then equation (29) becomes

$$a_{j.} - (\Sigma a_{k.}) m_j = -D_j . \tag{32}$$

Hence,

$$m_j = \frac{a_{j.} + D_j}{a} , \tag{33}$$

where a is the total number of movers in all strata, as before. If this result is substituted in equation (31), wherein M_{jj} becomes m_j, there emerges the basic equation (8) for the modified inheritance model.

In other words, the Blumen et al. assumption of equilibrium, combined with the requirement that predictions match observations in column marginals $A_{.i}$ as well as in diagonal entries A_{ii}, requires that

$$M_{ij} = \frac{a_{.j}}{a}, \tag{34}$$

and that the a_{ij}, the numbers of movers, be determined by equation (8). Solution of equation (8) for the a_i is equivalent to finding S, the fractions of stayers. Blumen et al. avoid complexities like those in equation (8) by using an estimation formula which can be written as

$$S_i = \left(\frac{A_{ii}}{A_{i.}} - \frac{a_{.i} - a_{ii}}{a - \Sigma a_{ii}}\right) \Big/ \left(1 - \frac{a_{.i} - a_{ii}}{a - \Sigma a_{ii}}\right). \tag{35}$$

Since movers alone can appear in off-diagonal cells, by hypothesis, all quantities in (35) can be reduced to observables, A_{ij}. However, (35) is not a consistent estimator, as Goodman (1961) has demonstrated.[13] Goodman (1961) presents[14] a variety of iterative schemes for modification of and alternatives to the estimators used by Blumen et al. His proposals, like those of Blumen et al., all derive from the theory of statistical inference. They are based on an overall criterion of goodness of fit rather than a specific requirement that prediction match observation on the diagonal, and they do not require that predicted column totals equal the observed values.

The modified inheritance model as adapted to intragenerational mobility could be fitted to the data of Blumen et al. on mobility among industries. It is more instructive to apply the inheritance model to an intragenerational mobility table in which the categories are ordered by status. If unordered categories like industry groups are used, it is not implausible that the fraction of movers in a given destination after a long period should be the same for all categories of origin; but as soon as the men are regrouped into status categories instead, the plausibility of this hypothesis evaporates.

Blau and Duncan (1967, p. 498) report mobility between first job and current job using the same status categories and for the same men as for table 4. Table 5 reports the row marginals, the differences between row and column marginals, and the diagonal entries of this intragenerational mobility table. From this data the parameters in the modified inheritance model, reported in the last two columns, were fitted to predict the diago-

[13] Blumen et al. (1954, pp. 46, 47, 112) claim only that equation (35) is a good first approximation from the exact equations for maximum likelihood estimators they derive, but their statement of the conditions under which the approximation holds is not sufficient, as Goodman (1961) also shows.

[14] The model, and hence the estimators, differs from that in the articles by Goodman cited earlier in much the same way as the modified inheritance model differs from the original model (White 1963).

nal entries correctly. Nearly 15 percent of the total number of men stay in their initial category according to the model, and this is 75 percent of the total number of men in diagonal cells. The inheritance fraction, here the fraction of stayers, varies erratically by origin category in a pattern unlike that for intergenerational mobility, shown in table 4. Over half the men in the professional occupations are classed as stayers, and there is a tendency for categories which lose men ($D_i < 0$) to have smaller fractions of stayers.

TABLE 5

INTRAGENERATIONAL MOBILITY: DATA* AND PARAMETERS

Occupational Category	Observed Sizes†			Fitted Parameters	
	Row Sum (A_i)	Column Sum Less Row Sum (D_i)	Diagonal Entry (A_{ii})	Movers, in Row ($a_{i.}$)	Inheritance Fraction
Professionals:					
Self-employed	275	298	147	129.7	.528
Salaried	2,097	1,158	1,585	1,431.4	.508
Managers	485	2,687	173	342.5	.294
Salesmen, others	541	711	128	427.4	.210
Proprietors	234	2,552	85	162.0	.308
Clerical	4,229	−1,780	744	3,693.7	.127
Salesmen, retail	1,889	−1,270	96	1,822.8	.035
Craftsmen:					
Manufacturing	1,288	1,593	290	1,083.5	.159
Other	1,519	1,334	323	1,296.6	.146
Construction	859	1,100	225	668.9	.221
Operatives:					
Manufacturing	5,967	−1,993	1,124	5,381.2	.098
Other	4,396	−1,372	661	4,056.3	.077
Service	1,523	661	302	1,295.9	.149
Laborers:					
Manufacturing	2,015	−1,164	165	1,890.6	.062
Other	3,216	−1,505	371	2,974.0	.075
Farmers	1,248	821	449	840.1	.327
Farm laborers	5,704	−5,026	398	5,358.5	.061
No answer	1,674	1,195	443	1,341.4	.199
Total	39,969	0	7,699	34,196	.144

* From Blau and Duncan (1967, p. 498). † Population estimates in thousands.

The main conclusion is that the model does not fit the data. Instead of being constant, the percentage of movers entering into a given destination category varies quite systematically according to how close their origin category is in status to the destination. The pattern is illustrated in table 6 for three destination categories. The model predicts that $a_{.j}/a$ is the fraction of the movers, regardless of origin category, who should be found in category j after a long interval. The number of movers who start in category i according to the model is $a_{i.}$, and the observed num-

ber of men from category i with their current job in category j is A_{ij}. Thus,

$$\frac{A_{ij}}{a_i} = M_{ij} = \frac{a_{.j}}{a} \tag{36}$$

is the prediction. The A_{ij} are not the same percentages of $a_{i.}$ for different i and the same j: when j is 1, self-employed professionals as destination, the percentage exceeds the predicted value of 1.25 for high-status origin

TABLE 6

INTRAGENERATIONAL MOBILITY: PERCENTAGES OF MOVERS TO SELECTED CATEGORIES, BY ORIGIN CATEGORY

	Destination Category j*		
Origin Category i	1	8	15
Predicted:†			
Any origin category	1.25	7 83	4.30
Observed:‡			
Professionals:			
Self-employed	.	3	5
Salaried	13 1	3 3	.6
Manager	2	3 2	2
Salesmen, other	.7	.7	0
Proprietors	1	2	3
Clerical	1 8	5 2	2 1
Salesmen, retail	2.1	4 7	2 0
Craftsmen:			
Manufacturing	1 0		4.7
Other	4	12 8	2 0
Construction	4	11 4	4 0
Operatives:			
Manufacturing	4	14 9	3 8
Other	5	7 9	4.6
Service	5	4 0	6 8
Laborers:			
Manufacturing	4	11 2	6 7
Other	.3	6 6	
Farmers	4	6 2	5 4
Farm laborers	.2	5 6	7 1
No answer	1 5	4 9	4 6

* To simplify inspection, percentages to only three categories are reported: if all 18 were included, each row would sum to 100.

† From equation (36) using parameters in table 5.

‡ 100 $A_{ij}/a_{i.}$, since A_{ij} is the observed number of men, all necessarily movers, who go from category i to category j; and a_i is the total number of movers who start in category i, according to the modified inheritance model. Where the sample size in a cell is under 10, only one digit is given in the percentage.

categories, and falls well below it as one moves to lower-status origins. When j is 8 (craftsmen in manufacturing as the destination) the percentages of movers from most middle-status categories exceed the predicted value of 7.83, but both high and low categories send smaller percentages than that predicted.

Without a continuing flow of men into and out of the system, movers from different origins will end up distributed in the same way among

destinations, by the fixed point theorem for Markov chains. This is true whatever the transition probabilities per unit time, the P matrix, is, if the period is long. Therefore models for closed systems using constant Markov chains cannot explain intragenerational social mobility tables whether or not stayers are differentiated from movers. In the intergenerational case the modified inheritance model could be seen as a first approximation, and discrepancies between observed entries and its predictions could suggest further biases. But for intragenerational models of Blumen et al. type the biases in mobility are already reflected in the transition matrix P.

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The Computerized Construction of a Matched Sample[1]

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The use of matched sampling in experimental and nonexperimental research has been frustrated by the problems of attrition and incomplete matching. The amount of attrition of sample size and incomplete matching are shown to be a function of various aspects of the research, including the level of measurement of the matching variables, the sampling situation, the definition of a match, and the means used to construct matches. Several basic and heretofore neglected considerations in the conceptualization of a "match" are discussed. These considerations and a parallel set of desiderata became apparent during the computerized construction of two matched samples of black and white college graduates. Three approaches to the computerization of matching are described, the last of which—"guaranteed variable caliper matching"—meets the desiderata. We describe our clerical and field procedures from the computerized matching to the final matching based on completed interviews. The degree to which both computer matching and these procedures controlled attrition and incomplete matching is assessed. The quality of matches is found to be fairly high and attrition has been virtually eliminated, thus demonstrating the possibilities of our approach.

There are four obstacles to the use of matched sampling in experimental and quasi-experimental settings. They are attrition, incomplete matching, selection, and regression to the mean.

This paper concerns the first two hazards—their sources, the use of a computer, and subsequent clerical and field procedures to virtually elimi-

[1] An extended monograph based on the data used for illustrative purposes below will be published later next year. This project was conceived by the late Sydney S. Spivack of Princeton University who served as its research director. His insistence on the indispensable role of empirical inquiry in the formation of social policy led the present authors to seek methodological strategies that would be capable of testing Dr. Spivack's unfailingly sensitive theoretical and substantive insights. We are indebted to the following organizations who have partially supported the larger study: the College Entrance Examination Board, and the Ford, Carnegie, Esso Education, Alfred P. Sloan, New York, Woodrow Wilson National Fellowship, Seth Sprague Education, John Hay Whitney, Field, and Roger Williams Straus Memorial Foundations

nate attrition and minimize imperfect matching, and the assessment of both after a matched sample has been constructed.[2]

The authors recently constructed over 600 matched pairs, comprised of black and white college graduates interviewed by NORC between April 1967 and May 1968. Based on an extended and continuing study of matched sampling, we have determined that none of the above obstacles seriously undermines the subsequent analysis of our data. The procedures by which this result was obtained with respect to attrition and incomplete matching are discussed here. First, however, a brief description of our sampling and the terminology which evolved from it will be useful.

THE MATCHED SAMPLE OF GRADUATES

We have been studying the careers, economic achievement, and life styles of black and white male college graduates (with a total sample size of $N = 930$). There were three groups of graduates studied: (1) a relatively small group of black graduates from two integrated universities; (2) a very large population of white classmates—graduates from the same two universities; and (3) a large population of black graduates from a black university.

Our first step was to interview all of the black (male) graduates of the integrated universities who were members of classes which graduated from 1932 to 1964. We then matched these men to graduates of the Negro university and to members of a random sample of over 4,000 white graduates.[3] Matched graduates had the same year of graduation, had fathers with comparable occupational prestige levels (as measured by the Duncan Socioeconomic index), and attained comparable grade point averages. In the final sample, there were 327 black graduates from the integrated universities, 327 whites from the same schools, and 276 blacks from the Negro university.

TERMINOLOGY

Our research exposed the need for a standard terminology in matched sampling. Briefly, there are four types of variables involved in matching (see fig. 1). The first is the variable under study, the *dependent variable*. In our study the dependent variable comprises income and occupational prestige.

The focus of theoretical interest is usually on the relationship between

[2] The hazards of selection and regression to the mean are treated elsewhere (Althauser and Rubin 1970).

[3] More precisely, a series of random samples of varying sizes were drawn within the years in which previously interviewed blacks had graduated.

the dependent variable and the second type of variable—the paramount independent variable—the *match variable.* In our study, the match variable comprises white and black college graduates. A match variable is often composed of dichotomous subgroups, levels, or populations.[4] In experimental settings, of course, one matched group is the "experimental group"; the other, the "control" group. In quasi-experimental settings, there are usually two contrasting natural groups: whites and blacks; school dropouts and graduates; or smokers and nonsmokers.

The third type of variable is the *matching variable* with respect to which the matched groups are "made equivalent." Thus, one could match and pair off blacks and whites with fathers having the same education or type of job; dropouts and graduates with the same intelligence measures; smokers and nonsmokers with the same weight or the same occupational prestige. In either experimental or quasi-experimental settings, matching
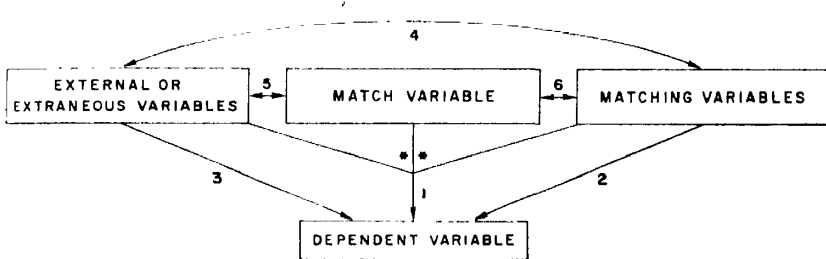
FIG. 1 —Causal diagram showing the relationships between match, matching, and extraneous variables prior to matching. Asterisk indicates interaction between match and external, and match and matching variables.

theoretically eliminates the relationships between the matching and match variables (see fig. 2*A*). An important assumption is also made that there is no statistical interaction between the match and matching variables in their relationships to the dependent variable. If one expects significant interaction between the match and the matching variables, matching is not appropriate.

Researchers cannot always match groups on all the matching variables that are related to the match variables. Whether because of insufficient numbers of potential respondents, lack of knowledge, or anticipation of variables related to both match and dependent variables, there are usually a set of other variables that go unmatched. These variables, unlike those in the theoretical system composed of match, matching, and dependent variables, may not be "known" or measured. When they are

[4] Matching with more than two groups has, of course, been done. It is analytically simpler, however, when we can conceive the characteristic defining match groups as a variable, for example, race distinguishes black and white graduates. This is always possible with two match groups; less likely with three or more.

measured, we will call them *external variables;* when unknown or unmeasured, *extraneous variables.* In experimental, but not quasi-experimental settings, randomization is used to eliminate the relationships between match and extraneous or external variables (see fig. 2*B*).

ATTRITION AND INCOMPLETE MATCHING

Given this background we can proceed with our discussion of the problems of a matched sample posed by attrition and incomplete matching. Attrition is the more self-evident of these two problems. It is, simply, the
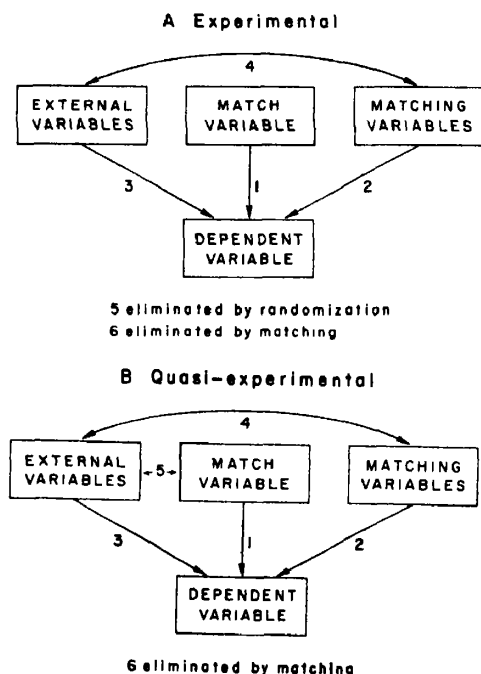
FIG. 2.—Causal diagram showing the relationships between variables subsequent to matching with randomization in experimental and quasi-experimental situations

loss of cases on which data have already been collected in the process of constructing a matched sample. A classic example of attrition is Christiansen's matched sample of high school graduates and high school dropouts. Some 96 percent of his completed interviews were discarded in achieving a final matched sample of forty-six cases (Chapin 1955).

The second obstacle is incomplete or imperfect matching—an inferior quality of matched sample. When there is an incomplete match, notable differences may remain between matched groups on one or more matching variables. For example, blacks and whites matched on father's occu-

pational prestige may be imperfectly matched. The average occupational prestige of whites' fathers may remain greater than that of the blacks. Such differences can contribute to differences between matched groups on the dependent variable, even when matching has achieved a considerable reduction of the initial difference (Yinger 1967; Peters and Van Voorhis 1940). In our example, the difference remaining in the father's occupational prestige of the blacks and whites explains part of the difference in the income or family size of each group.

Freedman (1950) has pointed out that attrition and imperfect matching are related. He considered whether or not the degree of difference between matched groups on a dependent variable is a function of the percentage of cases from the wider population that are either matched or discarded in achieving a matched sample. The differences in educational attainment of matched groups of migrants and nonmigrants were examined after 58 percent and then 88 percent of the smaller group of migrants had been matched. Freedman found a serious reduction[5] in the size and significance levels of these differences when the additional 30 percent had been matched.

It is experiences like those of Christensen and Freedman that account for the apparent decline in the use of matching. Many researchers, in designing studies, have assumed that these obstacles make matching altogether impractical, particularly in large samples. We think that such a strong assumption is unwarranted.

As will be discussed more fully below, attrition and incomplete matching are functions of the levels of measurements (ordinal or interval) of the variables on which we match; the number of matching variables; the sampling situation (whether both matched groups are constituted in succession or at the same time); the relative sizes of the parent populations on which data are available; and, most important, the definition of a match and the means used to accomplish matching.

CONDITIONS OF MATCHING

There are several determinants of the amounts of attrition and incomplete matching that will occur in any given research situation. Two determinants of some importance are the level of measurement of the matching variables and the number of matching variables. With respect to the first, matching variables are frequently on an ordinal level of

[5] This is an odd result. One would think that the 30 percent matched after the first 58 percent had been matched would be matches of lower quality (a greater inequality of individual matches). Hence, differences between matched groups in educational attainment would be larger. It can be shown that this result may reflect a nonmonotonic relationship between matching and dependent variables.

measurement. For example, in Yinger's sample (1967) culturally deprived students were matched on twelve ordinal matching variables. It is apparent from his index of incomplete or imperfect matching (index of congruence) that it is difficult to assess, much less interpret, the quality of matching. Ordinal matching variables typically possess few categories When one misses a perfect match by a difference of one category, one misses quite a lot relative to the range of that variable. The same holds true for matching on interval or nominal variables with few (two to five) points. On the one hand, one can maintain strict standards and accept only minor (e.g., one category) discrepancies in defining a match. But frequent discrepancies of more than one category between potential matches will result in much attrition. If standards are relaxed, on the other hand, attrition may be reduced at the cost of increasing the degree of incomplete matching.

By contrast, consider matching on interval level variables with many points (say ten or more). Two members of matched groups can differ on a matching variable without that difference being very large relative to the range of that variable. In effect, one has much more flexibility in defining matches of higher quality and in assessing or interpreting the quality of matching. It would seem more straightforward to assess the quality of a match by separately examining mean differences between matched groups on each matching variable than by forming an index of the sum of differences over all matching variables (as in Yinger 1967)

As is well known, attrition and incomplete matching also depend on the number of matching variables. The larger this number, the greater the loss of cases for any given standard defining an acceptable difference on each matching variable and the greater the imperfection of matching for a sample of any given level of acceptable attrition. Though it may seem desirable to match on as many variables as possible, the gains of matching on many more than three or four variables may be marginal (McNemar 1940, p. 346),[6] just as adding a fifth or sixth additional independent variable in a regression analysis may explain little additional variation. Thus, attrition and incomplete matching should not be further aggravated by this particular factor.

The three major determinants of attrition and poor matching are the types of sampling situation, the relative sizes of the parent populations, and the definition and construction of the matched sample. Our discussion of these presumes *interval* matching variables.

[6] Of course, a relevant substantive theory might omit a variable which is a prime candidate for a matching variable. In this case, there would be great gains if this variable was added to the other matching variables.

Sampling situation.—There are two different sampling situations (fig. 3) encountered in creating a matched sample.[7] The first is most common and has become the paradigm of all sampling situations: the researcher has two distinct populations with different distributions on a matching variable, and a matched sample is constructed from both populations simultaneously. That is, both members of each matched pair are chosen at the same point in time. As is frequently noted (Thorndike 1942), most of the possible pairs will be comprised of individuals whose scores on the matching variable lie between the population means of the two groups to be matched.

The second kind of situation finds the researcher with a prior sampling of the members of one matched group (or in a position to take such a
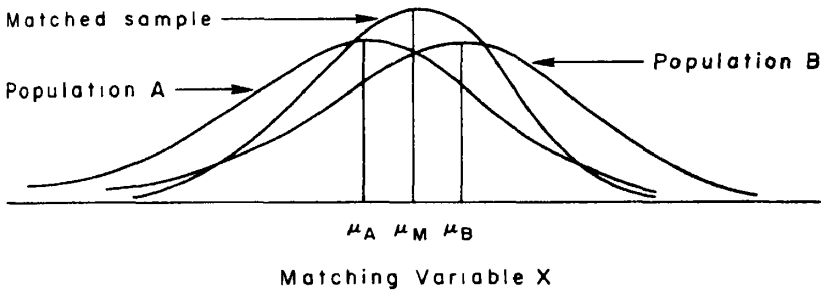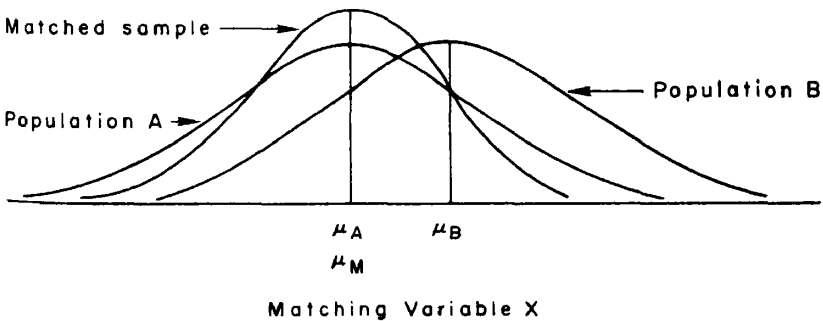
FIG. 3.—The two sampling situations in which matching is carried out

[7] This discussion joins previous treatments in assuming that the variances in matching variables in the respective populations are equal. The arguments that follow might have to be altered if this assumption were grossly violated.

sampling). He *then* constructs the second matched group. The chief difference vis-à-vis the first situation is that the mean of the matched sample on the matching variable is close if not equal to the mean of the first, previously sampled match group, rather than intermediate between the population means of both matched groups.

The great advantage of the second type of sampling, where there is prior knowledge of matching variables pertaining to the second matched group, is that attrition can be more easily minimized. Depending on the relative sizes of the matched groups' populations, it is possible to constitute a large enough pool of potential matches from the second population to yield matches for every member of a previously interviewed first group.

The second situation corresponds to that confronted in our study of black and white college graduates. Available information on black fathers' occupations was of lower quality than that on white graduates The only possible way of surmounting this problem was to interview all the black graduates first (from integrated schools—one of two samples of blacks), later matching white fellow graduates to the black graduates This could be a common situation, however, when studying natural matched groups. It will often make sense to survey all or a sample of one of the matched group's populations and then match these to members from the other group's population.

Relative size of parent populations.—The advantages accruing to the second approach to matching are greater the more disparate the sizes of the parent populations. Relatively small populations pose problems for matching in the first sampling situation: there are not enough members for matches with the larger matched group, and attrition and incomplete matching are aggravated. However, if a complete sample of this relatively smaller population is feasible, or if a 75 percent or 50 percent sample is more practical, then it is wise to obtain such a sample first and then find matches from the entire population or some subsample of the population of the relatively larger matched group.

Defining a match.—There would seem to be few things as intuitively clear or clerically simple as defining and constructing a matched sample The traditional method is to manually hand-match pairs of individuals with similar characteristics. This simplicity is belied, however, as soon as we attempt to match on two, three, or more matching variables. Indeed, our very conceptualization of a match is somewhat undermined by the flexibility offered by matching variables having internal levels of measurement. If, in addition, we match within a large number of groups (i.e., graduating classes), the manual construction of matched pairs becomes rather impractical.

Early in our study of college graduates, it became obvious that any

use of matched sampling in survey research required the use of a computer program to determine matches. In writing a series of such programs, our initial conceptualization of a match was fundamentally altered and enriched. Initial programs were later found unsatisfactory as several considerations and desiderata in matching occurred to us that are not to be found in previous literature.

CONSIDERATIONS IN MATCHING

What should be considered when defining a match? What are our desiderata? Three general considerations need no further introduction:

1. *Small calipers.*—In general, each researcher defines the size of a "just acceptable" difference between the matching variables of potential matches. He says, in effect, that respondent h of group 2 is an acceptable match if he falls within $\pm\epsilon$ of respondent g of group 1 (previously sampled) with respect to a given matching variable. This $\pm\epsilon$ we call the "calipers," and it is defined as the acceptably small difference between the matching variables of a matched pair. It is clearly desirable that these calipers be small enough to constitute a practical but meaningful equation of pairs. (In the case of our college graduate study, we sought to match graduates on father's occupational prestige within a caliper width of ± 10 points and on cumulative grade point average within $\pm .20$ points.) Regardless of which sampling situation is encountered, it will be easier to maintain small calipers in regions where the overlap of each group's distributions is great than in regions where it is small. For example, our white graduates have fathers with occupational prestige levels that are higher on the average than the fathers of black graduates. It follows that it will be easier to match black graduates with fathers high in occupational prestige than with those with low prestige.

2. *Relative importance of matching variables.*—Different matching variables have relationships with match and dependent variables of varying strengths. A researcher may accordingly feel that it is more important to achieve a closer match on one matching variable (which is closely related to the match variable). For example, we felt it was more important to achieve close matches on father's occupational prestige than on cumulative grade point average. To give consideration to the relative importance of matching variables, a procedure must permit wider calipers for less crucial variables in exchange for narrow calipers for more important variables.

3. *Intuitive close match.*—Even if the calipers on individual matches are made small by certain kinds of matching procedures, it does not follow that these matches are as intuitively close as those produced by other procedures. It becomes necessary, especially in computerized matching,

to explicitly seek intuitively close matches. Minimizing the proportion of matches made between people not intuitively close on matching variables is an important consideration, as we will see later in discussing quantile matching.

Three other considerations turn on the problem of generating potential matches. Whether sampling Situation I or II applies, it is often more practical to obtain (or retrieve) minimal data on matching variables for potential matches than to obtain (or retrieve) data on all the variables under study. In the latter case, resources are wasted on the many cases thrown away, unused in the creation of actual matches. Let us assume, then, that there are data on matching variables for one (sampling Situation II) or both (sampling Situation I) matched group populations *before* matching begins.[8]

It may also be impractical even to obtain data on matching variables for 100 percent of a large population of potential matches. If so, a very important question arises: how many members of a match group shall be randomly (or otherwise) sampled? In our study, we had to know how large a random sample of white graduates to take before gathering information about matching variables (father's occupation and grades). The number so sampled must be great enough to guarantee that each member of one match group has at least one match from the second group and, in actuality, several matches from the second group. Even without using randomization, backups to existing match partners are necessary in the event that interviews are refused, or a match partner cannot be located, or other constrictions are put upon the interviews.

4. *Even coverage in matches.*—As noted before, it is intrinsically difficult to achieve for each member of one group an equal number of potential matches if one insists on a constant, upper limit on acceptable calipers. Yet, we do desire an equal number (in broader terms) of potential matches for each member of a group. This may mean: (1) the same number of potential matches, ignoring overlap (see consideration 6); or (2) an equal and high probability that any given member of one group shall have at least N matches in the other group; or (3) a high probability that all members of a group shall have at least N matches.[9]

5. *Minimum sampling.*—The uncertainties of matching on more than one variable can generate the impractical notion that only a very large

[8] We also continue to assume that matching variables are at an interval level of measurement although the approach could handle ordinal matching variables. The quality of matches that will result, will depend, as suggested earlier, on the number of categories in these ordinal variables. With some qualifications the greater the number of categories, the better the match.

[9] In probability terms, 2 and 3 are quite different. Consider the difference between the probability that in a group of ten boys, any given boy will flip a coin head up and the probability that all ten boys will flip heads up at the same time!

sample of potential matches from one group can ensure at least one unique match (plus backups) for everyone in a second group. An overly large and therefore "safe" sample is very impractical, however, when information on matching variables is difficult or costly to obtain. Hence the smallest "large" sample still meeting the other desiderata is required.

6. *Minimum "overlap."*—Any matching procedure has an implicit problem with overlap which occurs when two similar subjects in one group have the same or some of the same acceptable matches from the second group. The amount of overlap varies depending upon the number of persons in a previously surveyed (or smaller) matched group requiring a match. In our study there were graduating classes with only one black graduate and others with over twenty. The more black graduates, the greater would be the potential scatter of their matching variable values, and the greater the chance that a given sampled white graduate would match more than one black graduate. Clearly, proportionately fewer numbers of whites needed to be sampled in classes with large numbers of black graduates than in classes with small numbers. But more generally, how do we minimize this overlap?

Some of these problems can be taken into consideration only at the expense of others. Steps taken to ensure close matches impede the even coverage in matches, since people with "outlying" matching variable values will get too few matches when calipers are too narrow. Again, one may wish to place more importance on one match variable than another, but at the cost of an even coverage of matches and acceptably small calipers. Yet all six considerations constitute desiderata in a general computerized procedure of achieving matches.

TYPES OF MATCHING OPERATIONS

We conceptually evolved a series of computer programs for matching. The considerations noted above were becoming apparent, one at a time, and determined the acceptability of successive matching programs Their acceptability also depended on the probable effect of each program on the amount of time, money, and physical labor entailed in gathering information on matching variables for white graduates. All but the last of the procedures were rejected. The third matching operation meets all six considerations.

1. *"Fixed caliper matching."*—An obvious if naïve start in constructing a computer matching program is to decide on the upper limits of acceptable calipers. A computer is then instructed to compute and array all differences between a given subject g of the first match group requiring a match and all subjects in the second group. Only subjects $h_1, \ldots,$ h_k with differences acceptably small enough are "accepted" as matches.

This procedure satisfies considerations 1 and 3 only. Not only is coverage uneven, but many subjects from the first group will, in all likelihood, not receive *any* matches. Impossibly large numbers of potential matches would have to be listed if the calipers were to remain small.

2. *Quantile matching.*—An apparently obvious solution to the problem of uneven coverage in matches would be to break the distributions in matching variables for the two matched groups into small quantiles and match within these quantiles (Cochran 1968). Hence, black graduates with father's occupations in the third decile, for example, would be matched with whites having father's occupations in the same decile. By varying the number of quantiles, considerations 1, 2, and 4 can be satisfied. Yet overlap is, if anything, accentuated; and most important, the intuitive notion of closest match is seriously violated. In the above example, a black graduate with a father's occupation in the thirty-ninth percentile of prestige could be paired with a white whose father's job was in the thirty-first percentile. Intuitively, a match with a white whose father's job prestige was in the fourth decile, here the forty-first percentile, would be a closer match.

3. *Guaranteed variable caliper matching.*—We learned from considering these first two procedures that the width of calipers for any matching variable would have to be a function of its value. Within the requirements of an average caliper which was still meaningfully small, the calipers had to be allowed to vary. The procedure finally built into the match computer program had the following features:

a) For each matching variable i, we find for each subject g (of group 1) needing at least N matches, a set of h closest subjects (in group 2), numbering n_i.

b) The sets of n_i closest matches are then intersected to determine if at least N members match on all of the matching variables. If at least N matches are not forthcoming, more of the not-quite-so-close subjects are added, until N is achieved.

c) Once N matches are achieved, they are randomly ordered. Prior to running the match computer program, all subjects in each matched group were assigned random numbers. The matching program now arranges the k subjects $h_1, \ldots, h_k$ who match each subject g in order of increasing random number. Hence the first subject on the random list becomes the match for g, the second subject is his first replacement, etc.

d) The relative importance of matching variables is reflected in the size of the n_i closest subjects who are potential matches, prior to their intersection. If for example, father's occupational prestige is three times as important as cumulative grade point average, then three times as many "close" subjects (n_i) in the second group are initially and subsequently listed on cumulative average—the less important variable—than on father's occupational prestige—the more important variable (i.e., n_i/r_i = constant, where r_i is the relative importance or weight of matching variable i).

e) At least N matches are guaranteed for each subject. The average calipers are, in general, increased by the wider calipers, given subjects with more extreme

matching variables. But the adjustment for relative importance assures us that most of these greater differences involve the more tolerable differences in less important matching variables. By drawing a large enough sample, the average caliper can remain respectably small enough despite the width of calipers for more extreme matches.

f) The computer program is also instructed to include all matches found within a specified minimum caliper on each matching variable. This procedure is followed even if calipers as wide as these minimums were needed to achieve at least N matches. Within this minimum all potential matches are substantively equal with respect to the matching variable. It makes little sense to exclude any of these from the list of matches. It should also reduce to some extent the overlap produced where it is the heaviest: where matches are easiest to achieve.

This last procedure met all considerations discussed earlier. Moreover it does not require an inordinately large number of people according to probability calculations.[10]

Using guaranteed variable caliper matching, then, graduates of the black university and white graduates from the two integrated universities were selected as potential matches to the previously interviewed black graduates from the integrated universities.

FIELD AND CLERICAL PROCEDURES

After the computerized match was run, a number of procedures were followed until each previously interviewed black graduate had received an acceptable match. The chronicle of these procedures which follows below is quite specific to our study of college graduates which until now has served to illustrate a more general discussion of matched sampling. It is offered, nonetheless, because discussions of practical experience in carrying forth research are regrettably rare (for an exception, see Hammond 1964). Methodological procedures are too often presented in a rarefied atmosphere unencumbered by the harsh realities of typical research settings. Only from such chronicles can the unfortunate distance between the "reconstructed logic" (Kaplan 1964) of idealized methodology and the "logic-in-use" of research behavior be narrowed.

The first step following the run of the computer matching program

[10] A predecessor to this procedure not discussed above was called "variable caliper matching." It focused on the probability that all subjects in the first matched group achieved at least three matches, while calculations for this procedure focused on the probability that each member of the first group had at least three matches. Rubin cites comparative calculations for each procedure using a common example: $n = 2$, $N = 3$, probability of matches on each matching variable = .1 and .2 (this is a function of the desired average caliper and relative importance of variables). This procedure required 149 members to be sampled; the predecessor 450, just for a $p = .5$ that 100 members of group one had at least three matches. The comparison is not entirely fair since different probabilities are involved. The basic point is that all the previous considerations can be met without sampling the very large numbers of people as required by a high probability that all members of one group have at least N matches. This "wastes" far too many people that are never used or needed.

was a careful examination of the output. The program just described did not preclude the listing of potential matches with matching variables excessively different from those of previously interviewed black respondents. This excess of acceptable calipers will tend to occur most frequently with the matching variable that is assigned lesser or the least importance (e.g., cumulative grade point average in our study). So we defined the maximum differences between the matching variables of black graduates and potentially matching white graduates which we felt we could accept: ±16 points for father's occupational prestige, and ±.60 cumulative grade points. The output from the match program was scanned and suggested matches exceeding these limits were crossed off

The second step was to determine a provisional match for each black graduate from the output. The only cases where this determination was as simple as reading off the names from the output was in years of graduation in which there were one or two previously interviewed black graduates, and no potential matches with unknown father's occupations (see complication 2 below).

Even with the list of computerized matches in hand, only a partial list of the needed interviews determined by the program could be initially given to the interviewing organization, NORC. Ordinarily, of course, one knows the complete list of people to be interviewed at the outset of the interviewing process, and survey organizations like NORC are organized on that presumption.

Some of the numerous complications that we encountered and our procedural responses to them follow below. Some of the responses took the form of additional features built into the computer program, like the use of random numbers. Most were made between the time we had the computer matches in hand and the point when a potential match suggested by the computer had been interviewed, and the interview's account of the primary father's occupation had been found consistent with the information about the graduate's father's occupation gathered from school records.

1. Hanging over our heads at all times was the costly possibility of unneeded interviews. While this problem is part of some of the other complications which follow, the danger was largely averted by waiting for the outcomes of interviews initially assigned (by the computer program) or already in the field.

2. Having data on one of the matching variables—father's occupation—for many of the potential matches prior to their being interviewed (something we had assumed earlier) was sometimes not possible. For some potential respondents, the information was simply missing from university records. In this event, a very brief screening questionnaire could be sent to potential matches to solicit these data. To avoid having

to send out an inordinately large number of these, however, the results of matching on the other matching variable—grade point average—were used to determine who would be sent a screener.

3. Prior knowledge of father's occupation, when available from school records, was sometimes inaccurate or too brief. In one school, this information was available only on a semester's registration card. The space allotted to father's occupation was quite small. Hence it was often impossible to accurately determine, much less code, the father's occupational prestige.

Moreover, we were in the position of using a sometimes doubtful item about father's primary occupation when the graduate-to-be was still in college to predict the father's primary occupation—what we really wanted to match on all along. Yet we would sometimes learn from the respondent's interview assigned on the basis of the former occupation that the primary father's occupation did not come close in its prestige to that of the initially assigned match. In this case, the only solution which would avoid the wasting of this interviewee was to reassign him to another previously interviewed black graduate still needing a match.

These last two complications were handled by procedures which involved the use of random numbers assigned to all potential matches (and to previously interviewed black graduates) prior to matching. We had the matching program list potential matches for each black graduate in order of increasing random number. In a simple determination of matches, the first name listed (with the lowest random number) on the computer output would be the first person assigned to be interviewed as a potential match for a given black graduate. In case he would not be interviewed or his father's occupation did not match the black graduate as expected, an interview would be sought with the second name on the list. In those years of graduation where some of the father's occupations were unknown and awaiting screening, the computer program was made to provide separate lists of potential matches with and without known fathers' occupation. In such years, the order in which persons were either interviewed or first screened for father's occupation was again determined by the lowest random number in either list. In effect, the list which had the names with the lowest random numbers was referred to for successive provisional matches for each black graduate.

Waiting for the return of screening questionnaires and interviews of initially matched respondents saved us the cost of other unnecessary and possibly redundant interviews. Unfortunately, these savings were counterbalanced by the increased cost (an increasing proportion of it fixed as time progressed) of having NORC stay in the field longer than anticipated, interviewing steadily decreasing numbers of people.

4. Refusals to be interviewed, the inability to obtain a respondent's

current address, or the discovery that a potential match lived too far from any of NORC's interviewing staff dispersed across the country provided the usual difficulties. All of these potential matches had to be replaced by other matches, until all of the initially interviewed Negro graduates had received an acceptable match. This was another though lesser contributor to the long time in the field.

5. Overlap among potential matches severely complicated the designation of these matches. In any year where there is a moderate (five) to large (ten) number of black graduates, a given white graduate may match more than one black graduate, or a given black graduate more than one white.

The most important and yet most complicated use of random numbers evolved as a solution to this problem of overlapping matches. Enormous "grids" or, more properly, matrices of potential matches as indicated by the match program were constructed (see example, table 1). Separate matrices were constructed for each graduating class. Across the top were arrayed the previously interviewed black graduates in order of increasing random number. Down the left side were listed all the names of graduates (white or black from the predominantly Negro university) that were matched to one or more previously interviewed black graduates. These latter names, too, are listed in order of increasing random numbers (e g., see table 1). Checks were made in the "cells" composed of the intersection of a black graduate's column and white match's row if the computer match program indicated they matched each other on cumulative grade point and father's occupational prestige. An illustration is shown in table 1. Overlap of matches is abundantly evident: *A* has two matches in either *O* or *S:* the remaining previously interviewed black graduates have multiple matches. Most graduates to be matched, except *T* (109), are potential matches for more than one black.

Matrices such as the above suggest an easy pair of rules to govern the random assignment of matches: if two "whites" (white graduates; black graduates from the all-Negro college) are potentially matchable to the same black, the white with the lowest random number is the designated matchee; if two previously interviewed black graduates match the same "white" graduate, the black with the lowest random number is assigned the "white" graduate. Following these rules in the above example, black graduate *A* is matched to the lower numbered *O* rather than *S:* "white" graduate *M* to *C*, rather than *F*. Accordingly, the matches in table 1 whose *X*'s are boldface would be suggested. With no extenuating complications of the sort previously noted, white graduates so matched to every one of the black graduates could have been assigned to interviews from the very beginning.

Because of the complications noted above, however, the number of people initially assigned to be interviewed would have to be limited. Of the above matches suggested by the simple application of our rules, only *M*, *N*, *O*, *P*, *Q*, and *R* could wisely be assigned to be interviewed at the outset: *M* would match *C*, *N* would match *E*, *O-A*, *P-B*, *Q-D*, and *R-F*. In the event that *Q* provided us with information of their father's occupation that proved inaccurate in comparison with data on their interview, then, *Q* might match *F* and *R* could be rematched to *G* (assuming, of course, that *R* had given accurate information about his father's occupation).

TABLE 1

ILLUSTRATIVE MATRIX OF MATCHES OF PREVIOUSLY INTERVIEWED NEGRO GRADUATES WITH WHITE OR NEGRO GRADUATES TO BE MATCHED

Name and Random No of Graduates to Be Matched	Previously Interviewed Black Graduates								
	A #37	B #59	C #84	D #159	E #457	F #478	G #503	H #590	I #703
M #5			X			X	X		
N #14			X		X				X
O #26	X							X	
P #55		X				X			X
Q #83				X		X			X
R #92		X				X	X		
S #99	X						X	X	
T #109								X	
U #189				X		X		X	X
V #287		X							X

But *S* may not be needed at all. If *M* failed to match *C* or *R* failed to match *B*, then *M* or *R* could be rematched to *G*. In that event, *S* would not be needed to match *G*. Since *S* does not match *H* or *I*, it cannot wisely be assigned until it is clearly needed to match *G*. Likewise, *T*, *U*, or *V* *may* be needed, but this would become clear only after previously assigned whites had failed to respond or otherwise not matched their initial assignee.[11]

The net result is that only a portion of the total number of blacks in any given class receive "whites" as provisional matches at the beginning of the interviews. As interviews are completed or refused, the matrix has to be restudied and a portion of the remaining whites and blacks matched. If we now add the complication of missing information on father's occupation to those of refusals and inaccurate information on father's occupation, the previous result is even more pronounced. There are many more *x*'s in the matrix when whites can be matched only on one matching

[11] The authors are indebted to Mrs. Beverly Lindenman for her work in selecting our 600 matchees by this sometimes demanding procedure.

variable—grade point average, for example. Questionnaires requesting the information missing on father's primary occupation must be sent out when the matrix indicates a possible match on the basis of matching grade point averages.

In our experience, this problem of missing information on father's occupation was by far the most serious of all complications. With a small refusal rate and only a modest incidence of missing *or* inaccurate information, these procedures are generally practical. If complications are more serious than this (a high refusal rate or a great deal of missing *and* inaccurate information), then matched sampling is probably not advisable.

Once the interviews with the second and third samples were completed and the father's primary occupation (rather than his occupation while the graduate was in college) was known, however, it was again determined if the computer's match would still obtain within certain upper limits: ±16 on father's occupational prestige; ±.60 on cumulative average. If so, the interviewee was accepted as originally matched; if not, the respondent was rematched, if possible, with another black graduate. In the end all matches were accomplished with respect to the same occupation, the father's principal occupation.

ASSESSING INCOMPLETE MATCHING

There are several ways of assessing the quality of a matched sample following the use of computers and adjunct clerical and field procedures. Let us illustrate again with our study of college graduates.

Ideally, all the rules and procedures outlined above would be followed for every single match: the two rules governing random assignment; the procedure of matching within the same year of graduation; the disallowance of differences in father's occupational prestige, and grade average above the limits of ±16 prestige points and ±.60 grade points. Our record in practice is not entirely consistent with these ideals but surprisingly close, as table 2 suggests. All four procedures were adhered to in about 75 percent of all matches. Taken separately, the individual procedures were observed in a higher percentage of cases (88–98 percent of all matches), and matches involving violation of two restrictions were very infrequent in all but one sample: 1.6 percent, 6 percent, and 0.7 percent, respectively. About 1 percent of the matches in each sample violated three restrictions; none violated all four. Together with the information in table 2, this suggests that most of the departure from ideal procedures was confined to the violation of one procedure.

Such information serves as an indicator of the quality of matches which can be achieved following procedures such as these, and of the practicality of such an achievement. There are more fundamental data that reveal the quality of matching, however. Were the initial differences between

samples on the matching variables reduced to zero or near zero? To rephrase the same inquiry, what are the remaining differences between matched pairs on the matching variables of occupational prestige and cumulative grade point average? Table 3 contains these differences, in terms of means[12] which alternately do (signed) and do not (unsigned) take the sign of the difference into account. The direction of all differences is taken as the later sample (whites or blacks from the Negro university) minus the previously interviewed black graduates from the

TABLE 2

PERCENTAGE OF MATCHES ACCOMPLISHED IN ACCORDANCE WITH PROCEDURES OF RANDOMIZATION, MATCHING WITHIN YEAR OF GRADUATION, AND MATCHING WITHIN ACCEPTABLE LIMITS ON FATHER'S OCCUPATIONAL PRESTIGE AND GRADE POINT AVERAGE, BY SAMPLE

	Sample Being Matched to Previously Interviewed Black Graduates		
Percentage Matched	Whites from Integrated Univ. A ($N = 127$)	Whites from Integrated Univ. B ($N = 200$)	Blacks from Negro Univ. ($N = 276$)
By all four procedures	74	77	80
Within acceptable limits on:			
Cumulative average	94	94	94
Father's occupational prestige	88	92	93
Within the same year of graduation	88	90	93
By the two rules of randomization	98	93	98

TABLE 3

SIGNED AND UNSIGNED MEAN DIFFERENCES BETWEEN MATCHED PAIRS ON FATHER'S OCCUPATIONAL PRESTIGE AND CUMULATIVE GRADE POINT AVERAGE, BY SAMPLE

	Sample Being Matched to Previously Interviewed Black Graduates		
Mean Differences between Matched Pairs	Whites from Integrated Univ A ($N = 127$)	Whites from Integrated Univ B ($N = 200$)	Negroes from Negro Univ. ($N = 276$)
Father's occupational prestige:			
Signed difference	+5 7	+3 7	+1.4
Unsigned difference	9 1	8.5	7.3
Cumulative grade point average:			
Signed difference	−0 03	−0.02	+0 02
Unsigned difference	0.18	0 21	0 22

[12] Medians were very close to means and are not presented.

integrated schools. As we can see, the largest signed mean difference in father's occupational prestige was +5.7, indicating that whites had fathers with higher occupational prestige.

The unsigned differences convey the average size of the absolute differences between matched pairs, disregarding the sign of each pair. These are noticeably larger than the signed differences. This suggests that the small size of the signed differences was a function of having a rather symmetrical distribution of signed differences, that is, as many positive differences of a given size as negative. This does not render the small signed differences artifactual but rather shows the larger average absolute difference that tended to obtain.

ASSESSING ATTRITION

The basic question in assessing attrition, in either the first or second sampling situation, is what percentage of respondents on whom data have been collected were actually used in the final matched sample. In our study, 100 percent or all of the initially interviewed black graduates from the integrated universities received matches. More problematic was the percentage of interviews among members of the second group of black graduates and the white graduates that met the minimum standards of a match. There was an inherent danger that a high percentage of these interviews would be wasted (i.e., would prove to be unmatchable to any of the previously interviewed black graduates).

Fortunately, the wastage was kept reasonably small. For one of the two white samples, twenty-five (16.4 percent) of the interviews completed were "no-matches." For the other white sample, twenty (9 percent) were unusable. Among the second group of black graduates, a mere five (1.8 percent) proved to be nonmatches. Overall, there were fifty unusable interviews, comprising 7.6 percent of the total number of completed interviews among these latter groups.

SUMMARY AND DISCUSSION

We have shown that the amount of attrition of sample size and incomplete matching depends, among other things, on the level of measurement of the matching variable, the sampling situation, the definition of a match, and the means used to construct matches. Several basic considerations in the very conceptualization of matching have been described These considerations and a parallel set of desiderata evolved in the computerized construction of some 600 matches in a study of black and white college graduates. Of the three approaches to the computerization of matching described, the last—guaranteed variable caliper matching—met our desiderata.

A chronicle of our research experience, clerical, and field procedures during the period of interviewing between the computer's matching and a final match based on completed interviews has been offered. The success of both computer matching and these procedures in controlling attrition and incomplete matching have been assessed. The virtual elimination of attrition and the fairly high quality of matches in the study of black and white graduates show the capabilities of the entire approach and suggest the obsolescence of conceptualizations of matching premised on noncomputerized procedures such as hand-matching.

Some note should be made of possible directions of further research. We have approached the task of matching by making no assumptions about the specific relationships (e.g., linear) between the matching and dependent variables. The program used above is probably satisfactory for a wide variety of unspecified relationships. For matching when a specific relationship is assumed, on the other hand, other, better programs could be developed. These would eliminate more bias than our program; would eliminate more of the effects of the initial differences between matched groups with respect to the matching variables. However, such programs might produce more bias than ours if such assumptions were faulty.

Another possible topic of study is the choice of matching, or covariance, or their joint use in removing bias. The question is, which of these tends to remove bias, and under what conditions are either superior in that respect? It is also possible that there are advantages to using both at the same time. Author Rubin is currently investigating these questions.

Finally, one referee on this paper urges us toward a mathematical formalization of matching, encompassing such factors as the total budget, the cost per case, the acceptable number of wasted cases, the sample size, the variances and covariances of variables, and, let us add, the quality of data on the matching variables prior to matching and to the broader collection of data. Given these factors, the problem would be to minimize the variance of the difference of means between matched groups on the dependent variable. (For an attempt along these lines, see Billewicz 1965).

While beyond the scope of this paper, such a project would be worthwhile. We would note that the problem is complicated by the interrelationships of these factors, not only with the variance under study, but with each other. Some examples: the total budget may influence the acceptable number of wasted cases; the greater the budget, the greater that number can be. Or, as we found in matching, the cost per case may increase with increasing sample size and with an inferior quality of data on matching variables prior to matching. Or, if we wish to avoid wasting many cases, we may add to the cost per case by staying in the field longer. One could go on like this, effectively constructing a causal model

of such factors, with the variance of the difference of means as the paramount dependent variable in the model.

Of course, when matching is accomplished prior to the full collection of data, one may not know the variances and covariances of all the variables before matching takes place. Presumably, estimates of these would be necessarily made by reference to previous findings.

However, the problem of removing bias, rather than of increasing precision (or minimizing this variance) seems to us far more urgent. In matching, at least, the absence of bias even with a lack of precision is much to be preferred to some unremoved bias and considerable precision. Factors like sample size are not as directly implicated in the problem of bias as are, for example, the considerations in matching described earlier. In retrospect, our paper reflects this greater concern with bias as opposed to precision.

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Book Reviews

Change and Renewal in an Urban Community. By Eleanor P. Wolf and Charles N. Lebeaux. New York: Frederick A. Praeger, Inc., 1969. Pp. 610. $19.50.

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After a period of inflated expectations about urban renewal and the prospects for stably integrated central cities, American sociologists and city planners have begun to reassess critically and even to deplore the general impact of urban revitalization programs. *Change and Renewal in an Urban Community*, by Eleanor Paperno Wolf and Charles N. Lebeaux, is one such reevaluation, based on large amounts of data collected in the Detroit area.

Each of the five case studies that constitute the book helps to clarify a specific issue related to the crisis of the inner city. Thus, part 1 is about the transition from white to black residency in a middle-class neighborhood; part 2 describes an integrated middle-class redevelopment area; part 3 provides some insight into life styles and attitudes in a low-income black neighborhood slated for renewal; and parts 4 and 5 treat the problems of household and business relocation out of an urban-renewal area. The findings are rich and detailed, but one might select the following five conclusions as a brief summary. Under present conditions of the housing market and the public school system, transition from white to black residency is only infrequently a reversible or stabilizable process in older urban neighborhoods; city planners will have to cease thinking in terms of "stemming the tide," will have to accept the reality of a central city inhabited in large part by blacks, and will be able to look forward to generally orderly and peaceful successions. Second, some neighborhoods, particularly redeveloped ones occupied by an influx of "volunteers," can attain stable integration of *primarily middle-class* black and white populations. A third set of remarks concerns the issue of poverty. It is most productive for city planners to conceptualize the problems of slum neighborhoods as results of the low income of their inhabitants (and not as a result of ethnic subcultural characteristics or a pervasive self-perpetuating "culture of poverty") and hence to remedy them by the infusion of large amounts of money, possibly in the form of job programs but more probably in the form of guaranteed-income programs. In this respect, the authors agree with Liebow and others in their diagnosis of the source of so-called ghetto pathologies and disagree with Moynihan or Lewis (although conceivably they might advocate convergent measures to change the present situation). Their findings about the employment (more accurately, the *un*employment and *under*employment) of black youth are particularly grim; contrary to popular misconceptions, young black women are in an even less favorable market position than

their male counterparts, and possession of a high school diploma improves the employment situation of either sex only very little beyond the opportunities open to high school dropouts. Emerging from the authors' discussion of the poor is their contention that class heterogeneity (as opposed to racial integration) is virtually impossible to create or sustain in American urban neighborhoods. The fourth major conclusion is that relocation of both households and businesses is a largely damaging experience, traumatic in greater or lesser degree for the individuals who have been displaced and for the small businesses, which frequently do not survive.

None of these conclusions should be startling to the sociologist, the social worker, or the city planner; yet welfare and urban-renewal programs have repeatedly operated in ignorance or deliberate neglect of these basic facts. This consideration suggests the major weakness of the Wolf-Lebeaux volume, namely, insufficient material about the political institutions and processes that contribute to the present problems of the city, particularly the conditions of ghetto life and the oppressive impact of renewal programs on those who are displaced. The authors are aware of the political background of the existing poverty and renewal schemes, and in the straightforwardly and intelligently written conclusion address themselves indirectly to the political barriers that stand in the way of fairer attempts to improve inner-city life.

Their data, much of it in the form of single-variable tabulations based on individual interviews (well supplemented for two of the case studies with participant-observer material), provide a wealth of insight into individual attitudes and individual decision making (and life styles) but virtually none into the distribution and use of power in Detroit and in those branches of the federal government concerned with cities It is of course unfair to demand these data from a study that is already very long and quite successful in its presentation of attitude and life-style material. Nevertheless, the public officials and community leaders to whom among others, *Change and Renewal in an Urban Community* is addressed will have to concern themselves with the issue of how the citizens described in the pages of the report can obtain better incomes, better schooling, and better treatment in renewal and housing programs. Votes and the threat of violence can give "clout" to inner-city residents at the local level but are probably insufficient for exercising power at the national level; the authors recognize but do not discuss in much detail the need for some form of coalition politics to gain the absolutely essential leverage upon the federal government. In this context, one might remark on the timing of the book. The data were collected in the mid-1960s, but the passage of time and intervening events—above all, the Detroit riots—only lend more urgency to the authors' explicit and implicit conclusions. But unfortunately, the publication date coincides with a most inauspicious

period in the federal administration's sense of responsibility for effective approaches to the inner city; benign neglect is hardly the response which Wolf and Lebeaux seek! Futhermore, as western European observers have also noted, successful income equalization would involve some relative deprivation for the middle majority (and with present national priorities, probably some absolute deprivation as well) and is hence likely to be politically unpopular.

Methodologically and stylistically, *Change and Renewal* is simple and readable. Since it has few pretensions to theoretical development and is addressed to a wide public, the absence of sociological terminology is appropriate and refreshing. As noted above, the quantitative data are almost entirely in the form of single-variable tables in which the greater precision and complexity of cross-tabulation and multivariate analysis are sacrificed to readability and the support of clear, broad conclusions. The emphasis on individual characteristics makes the findings widely applicable for U.S. cities where stronger stress on political structure would have tied the study more closely to its Detroit locale. The participant-observer data, particularly in the section on the low-income black neighborhood, are rich but, at least for this reviewer, raised some ethical questions; although the observers identified themselves as such to their subjects, some of the material seems to be a revelation of what (by the middle-class standards of the book's audience, anyway) are private aspects of life and attitudes. (This ethical problem is latent in most sociological research, but here the subjects are particularly defenseless.) The portrait that emerges is of an economically wretched and often self-hating group which is nevertheless filled with vitality and an absolutely unsentimental realism. The report underlines that, for the poor in our society, there is no reward for the supposedly middle-class virtues—gratification deferment, hard labor, sexual repressiveness; thus, to practice them is senseless and those who do so merely assume the triple burden of poverty, constricted pleasures, *and* precisely the same punitive attitudes and procedures that the dominant society's institutions impose on non-middle-class-oriented poor people.

The material in *Change and Renewal* would lend itself equally well to at least two theoretical frameworks, a neo-Marxist perspective and a human ecology approach. But the authors do not include any theoretical analysis of the data, apparently an intentional omission.

In sum, *Change and Renewal in an Urban Community* will be of interest to all but the most abstractly theoretical observers of American cities. Its main failure is the lack of analysis of the social and political structure that underlies the individual attitudes, life styles, and decisions. Nevertheless *Change and Renewal* is a must for public officials, whose fantasies it may help to destroy. In a less expensive edition it could be a valuable selection for an undergraduate course in urban sociology.

The Ghetto and Beyond: Essays on Jewish Life in America. Edited by Peter I. Rose. New York: Random House, 1969. Pp. 504. $4.75 (paper)

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Jews are fascinating—especially to other Jews. Yet take the case of the Jewish intellectual. For him, the fascination with Judaism and with fellow Jews is submerged beneath an ideological layer that stresses objectivity, universalism, and detachment. Since Judaism is seen as subjective, particularistic, and emotionally involving, then it must be relegated to a distant secondary status. Now, let us consider another fact, namely, the attraction of Jewish-American intellectuals for the social sciences. Although Jews comprise only 3 percent of the American population, they make up about 36 percent of all American social psychologists, 45 percent of all clinical psychologists, and 35 percent of all sociologists. Why then have so few Jewish-American social scientists applied their skills and knowledge to the study of American Jewry? An intriguing question. Therefore, when an anthology of essays on Jewish life in America appears, it is cause for special rejoicing.

Peter I. Rose's reader is the first of its kind to emerge in the eleven years since Marshall Sklare's *The Jews: Social Patterns of an American Group.* Sklare's book was the first of its kind to appear since 1942, when Isaque Graeber and S. H. Britt (eds.), *Jews in a Gentile World,* and Oscar I. Janowsky (ed.), *The American Jew: A Composite Portrait,* were published. Thus, in nearly thirty years, only four or five *readers* have appeared. (One could also add Charles Stembers's *Jews in the Mind of America* [1966] to the list.) What is shocking is not that there is so little literature but that, with thousands of Jewish social scientists available, there is so little. Rose's book, then, comes as a waft of perfume—a fine, witty, and intelligent account of the Jewish *mishugas* in America. His book emerged in 1969 by a combination of many trends. First, Jewishness seems to be "in" today. Notice all the novels, jokes, movies, and plays on a Jewish theme. Second, there is an increase in ethnic and racial chauvinism, and it has become a "fad" to write in the genre. Notice the preponderance of books on, for example, black history and sociology. The "melting pot" theory seems to be a fraud—even WASPs are just another ethnic group in the American mosaic. Ethnicity lives, says Daniel Moynihan, and Rose has contributed a valuable piece to the growing literature.

Of the twenty-six articles in this reader, six were written specifically for this volume. The others came from such sources as *Midstream, Commentary, Journal of Jewish Sociology,* and *Judaism.* For the record, one can add the names of a few other professional journals that Rose does

does not use for articles yet which may be of academic interest: *Jewish Education* (since 1929); *Jewish Social Studies* (since 1939); *YIVO Annual of Jewish Social Science* (since 1946). If some feel that these are "mickey mouse" journals, one will be comforted to know that such eminent social scientists as Daniel J. Levinson, Oscar Handlin, and even Florian Znaniecki and Robert M. MacIver have contributed to them.

Rose's anthology was written with the help of his friends, among them Seymour M. Lipset, Melvin Tumin, Louis Ruchames, and Philip Roth. Lipset's article, "The American Jewish Community in a Comparative Context," demonstrates a comparative analysis of Jewish communities. This type of perspective is important in analyzing any transnational group, that is, blacks, Spanish speakers, or Catholics. It would be scientifically more significant and theoretically more attractive, it seems, if there were less emphasis on the Jew's uniqueness and more on whatever common characteristics he has with other ethnic and religious communities. But would Jews "allow" that? Philip Roth's "Writing about Jews" poignantly describes the dilemma of the Jewish-American writer. To whom does he owe allegiance—to his people or his craft? The same question can be asked of any intellectual—black, southerner, or Catholic. Zena Smith Blau's "In Defense of the Jewish Mother" is not only a paean to the Yiddishe Mama but an important contribution to research on familial (especially maternal) influence on occupational aspirations. The Jewish mother, by cajolery, guilt inducement, and good food, gives support to the ambitions of the Jewish child. In contrast, the black mother may have similar aspirations, but peer-group influence (plus racism) nullifies this support and stunts her children's hopes and dreams. Louis Ruchames presents a long overdue report on the history of Jewish radicalism in the United States. These are only a sampling of the many fine articles found in the reader.

The "non-Jewish" Jew of the nineteenth century, encountering anti-Semitism and parochialism, transcended Judaism and went on to other goals. Men and women such as Heine, Marx, Rosa Luxemburg, Trotsky, and Freud, as well as sociologists, such as Simmel, Durkheim, Lévy-Bruhl, and Mauss, all found Judaism too constricting. Yet they turned their alienation into an asset with their contributions to Western social thought. Compare them to the twentieth-century American Jewish intellectual. He has newfound freedoms. His alienation is neither as pervasive nor as deep as his counterpart in the previous century. Does this reduced marginality hinder his creative tension? In short, the crucial question is whether the Jewish intellectual, and specifically the Jewish social scientists, will have similar wellsprings of creativity despite America's new freedoms, despite the thrust of racial and religious neo-chauvinisms, and despite Jewishness being "in" today—or, just maybe, in spite of these reasons?

The Man Who Plays Alone. By Danilo Dolci. New York: Pantheon Books, 1968. Pp. xvi+367. $7.95.

Gus Tylor
International Ladies Garment Workers' Union

The title and dust jacket of Dolci's documentary on Sicily are misleading. Under the title is the subtitle *The Story of One Man's Fight against the Sicilian Mafia.* A cover photo shows a dead man surrounded by investigators, including one taking notes. The total impression is that Dolci is some Mediterranean-type Lone Ranger. All of which may help sales but will disappoint the reader who expects a hot crime story.

Basically, Dolci's documentary is a sociological analysis of Sicilian culture—or at least that aspect of it that atomizes the island's society In a secondary sense, the account indicts the Mafia as product and promoter of this pulverization of a people. In a tertiary way, Dolci points the finger at the Christian Democrats, who, in alliance with the Mafia, govern Sicily.

The title is derived from the Sicilian proverb that "the man who plays alone never loses." Keep to yourself. Don't get involved. Beware of organizations—unions, co-ops, parties, neighborhood get-togethers. The basic life style is "salutamu e cacciamu" —we greet each other and then go our own ways. The first two-thirds of the book describes this loneness and searches for an explanation.

The form in which the book is cast severely limits the depth of Dolci's probing. The author acts as a reporter, conducting interviews with a wide variety of Sicilians who speak from their experiences and attitudes This gives the book credibility, lightness, change of pace, readability But it does not really get beyond description to explanation: how this came to be and why it persists.

There is one interview with an archaeologist who outlines Palermo's history but who, most unhistorically, does not tie past to present. He does record that Sicily (a stepping-stone from the Levant to the West, from Africa to Europe) has been overrun by a long succession of conquerors, with their strange tongues and irrelevant laws. But what is missing is the explanation of how these repeated dominations drove the native population into a protracted subculture run by an unofficial government, a class of strong men who ultimately became the Mafia.

Repeatedly, Dolci refers to the prevailing system of "clientship," a term that goes undefined. Actually, this is what Americans call "pull" or "patronage." You vote for me and I will get a job (or whatever) for you. To get anywhere in Palermo, you must know somebody, and that somebody, if he is to wield clout, must be a Mafioso or a "friend of a friend." Since the Mafia is the dominant power in government and in the economy, it holds power of life or death over people. And like any total ruler, it looks with suspicion and disapproval upon any form of "associa-

tion" other than its own. Where a "group" grows up, the Mafia must rule it or ruin it.

Although the book is presented as a Sicilian study, it should hold great interest for American readers on two counts: first, it adds another dimension to the running debate on whether there is—or is not—a Mafia; second, it casts a new light on the subculture of poverty in a society where the excluded and exploited are not of a different color or tongue. In Palermo, as in other dens of the defeated and depressed, poverty does not unite the mass into a powerful force. Fear fragments. The poor turn against one another and turn, in dependence, to the good godfather, or a friend of a friend, for help. When, out of such a messy milieu, a movement of protest does arise, it is led by extremists who, in gangland style, are silenced without benefit of due process.

The last one-third of the book recounts several meetings to investigate the Mafia and its relations with the politicos (Sicilian teach-ins, as it were) and carries excerpts from a libel trial against Dolci and associates Although these sections would, if filmed, make for the best television material (confrontation and suspense), they add little to digging into or coping with the problem. At least a dozen volumes appearing on organized crime in America in the last decade contain richer, more sophisticated, more thoroughly documented accounts of how the Mafia functions.

Studies in Social Policy and Planning. By Alfred J. Kahn. New York: Russell Sage Foundation, 1969. Pp. x+326. $8.75.

On Understanding Poverty: Perspectives from the Social Sciences. Edited by Daniel P. Moynihan. New York: Basic Books, 1969. Pp. xiv+425. $10.00.

Thomas Blau

University of Chicago

Alfred Kahn organizes the historical record of government action on certain social problems and the analytic responses of researchers to that action. The book is useful as a "reference with a point of view" and is best when it is most concrete. I was unable to draw much from Kahn's general comments on planning and policy. Two cases in point follow:

He writes of the war on poverty that "the socio-therapeutic values of local initiatives were appreciated" (p. 51). By whom? The passive voice lends a false authoritativeness which the lack of citation or evidence does not improve. Certainly it was not "appreciated" by the poor, who once more enjoyed the "therapy" of millennial government rhetoric and the subsequent failure to deliver. Psychiatrists will be astonished by the assertion that to tease the suffering with overblown if not false hopes will improve their mental health. Sociologists should be astonished by the corollary that lower-class political integration will be helped by the

elite provoking them with promises it has no intention of fulfilling.

Kahn "would prefer the Council of Economic Advisors to broaden its concerns (*and name*)" (p. 315; my italics) to include social, as well as economic, indicators. There are two related malaises here which plague scholars of public policy: the temptation to aggrandize one's own discipline and the temptation to doodle organizationally. Kahn's suggestion is extraordinary because: (1) its political prospects are non-existent; (2) the Council of Economic Advisors is quite sufficiently occupied these days; (3) social indicators cannot be well integrated with the economic not because of insufficient "correlation," as Kahn suggests, but because of unequal theoretical development and unification; and (4) investing problematic research findings with a White House stamp of "science" and "professionalism" will lead to their being presented as finished and "above politics." For the rest, see the history of urban reform.

Daniel P. Moynihan's volume is a collection of important papers, including Duncan's use of path analysis in a model comparing black and white life cycles ("Inheritance of Poverty or Inheritance of Race?"), Lewis's statement on "The Culture of Poverty," Rossi and Blum's very intelligent clarification of the issues of "Class, Status, and Poverty," and similarly skillful papers by Rainwater, Walter Miller, Gans, and others. The general theme is culture versus situation in poverty. Appropriately, the last two papers by Watts and Rosenthal solidify the discussion, as economists seem to be doing everywhere.

I see no evidence that the "culture of poverty" can be verified as interesting to anyone but an anthropologist. It must be shown to be holistic, and then as consistently determining only personally dysfunctional response. Even then, it may not be of ultimate political importance. Above all, poverty is a political problem in which a liberal national ideology, in an age of affluence, implies the extension of "enfranchisement" from politics to finances. The disparity between belief and perceived reality is the problem. Anything less than formal positive law with universalistic application (such as income floors) makes poverty inevitable and perpetuates the "culture" doctrine for those willing to believe in it.

The papers in Moynihan's volume confirmed my belief that the greatest harm done to the poor has been by their white, higher-degreed, self-styled "friends" who took it upon themselves to defend this "culture." As Bruno Bettelheim often remarks, "If the anthropologists think it's so beautiful, why don't they go live there?" Anthropology and social casework, as guides to public policy, lead to "socio-therapeutic" legislative responses (such as the war on poverty) to political problems based on quite problematic research "results." Moynihan shows an acute sensitivity to these issues in his introductory paper, "The Professors and the Poor": "the most pernicious effect of the poverty ideology has been its tendency to discourage rigorous inquiry into the social process that keeps men in poverty or leads them out"

(p. 33). He then seriously questions the usefulness of "white racism" as a causal factor in the context of American politics, "not in the least associated with an apparent national impluse to do anything about the condition described" (p. 34).

I would add this. There is no constitutional guarantee against personal prejudice. Ideological guarantees are weak if not ambiguous. What is unconstitutional, in both the written and the Aristotelian senses, is prejudice that is governmental, legal, formal. Partly with insights from the social sciences, including those I criticize, this has become sophisticated as an attempt to minimize, at least, differential access to the labor market based on ascriptive grounds. The labor market includes sectors of access and support: schooling, housing, medical care, etc. This is a political problem demanding political response. The operational implications of "white racism" seem to prescribe therapy for the more racist lower-class whites. The impossibility there leaves us with mea culpa in the bar car of the Penn Central, speeding through Harlem, heading for Westport.

The Democratic Policeman. By George E. Berkley. Boston: Beacon Press, 1969. Pp. 232. $7.50.

Minorities and the Police: Confrontation in America. By David H. Bayley and Harold Mendelsohn. New York: Free Press, 1969. Pp. xii+209. $6.95.

Alphonso Pinkney

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Members of the New Left refer to the police in the United States as "Pigs," by which they mean, according to the Black Panther party, which is responsible for this label, that the police have "no regard for law, justice, or the rights of people." Aside from the appropriateness of this epithet, support for the characterization of American police as generally antidemocratic is provided in *The Democratic Policeman*. Berkley begins his study of the police in four western European countries (England, France, Sweden, and West Germany) and the United States by asserting that "the police more than any other institution exhibit an antagonism, both in concept and practice, to some of the basic precepts of a democratic society. In many respects, the phrase 'democratic police force' is a contradiction in terms" (pp. 1–2).

The democratic policeman, unlike his totalitarian counterpart, observes certain norms, especially restraint in the use of force and respect for the rights of individuals. In comparing the police in the United States with those in the western European countries studied, Berkley arrives at conditions which foster democracy among the police: centralization, standardization of procedures, job mobility, employee participation in decision making, civilian administration and control, employment of

women, and emphasis on higher education. In all of these areas, American police lag far behind their counterparts in these European countries.

Furthermore, in some respects, especially their reliance on the use of force and their involvement in corruption, American police resemble those of Hitler's Germany and Mussolini's Italy. Many of them are members or supporters of such right-wing groups as the John Birch Society and the Ku Klux Klan. They resent and bypass legislation and judicial rulings which protect the rights of citizens by curbing police power. They have been known to engage in such practices as carrying knives to plant on victims they might wound or kill so that they can claim self-defense. Corruption is rampant. The list of such practices provided by Berkley is extensive. He concludes that the antidemocratic attitudes and practices of American police are supported by the larger society. "If the American police are prone to use violent and repressive tactics, American society offers them the means and the climate to do so" (p. 197). It follows, then, that reform among the police without broader social reform is not likely to create democratic police in the United States.

Minorities and the Police is a study which resulted from public-opinion surveys in Denver, Colorado, in 1966. Four groups of people were surveyed: minorities ("Negroes" and "Spanish-named"), policemen, members of the dominant community ("whites of non-Mexican-American extraction"), and community leaders. The purpose of the study was to explore the relations between the police and the community, especially minorities, in an effort to examine constraints on both sides. Although it was limited to one city, this is one of the most comprehensive studies of police-community relations ever undertaken, and the authors feel that their data are representative of these relations in other metropolitan areas.

The picture presented of the Denver police differs from that of the American police in general as reported by Berkley. Bayley and Mendelsohn devote the first chapter to the question, Who are the police? Their answer, especially insofar as personality characteristics are concerned, is that they are "absolutely average people, and when they differ from the community norm it is in the direction of being better or more nobly disposed than their fellowmen" (p. 15). The police scored lower than others in Denver on the scale of anomie; they scored lower on a scale of authoritarianism than populations in Lansing, Michigan, and Nashville, Tennessee. Politically, however, they tend to be more conservative than the community as a whole; for example, in the 1964 election 49 percent of the police voted for Goldwater compared with only 28 percent of the city as a whole. But the authors report that there is no association between personality characteristics and political conservatism. Furthermore, political conservatism is not related to background characteristics such as age, education, religion, or size of the community in which they grew up. Nor is it related to income. What accounts for their conservatism? The answer is that "there seems

to be something about being a policeman that either selects more conservative individuals or encourages them to become conservative after joining" (p. 27). But there is no association between police wörk and personality characteristics.

Other chapters deal with images of police work by both the police and the public; the frequency and nature of contacts between the police and the public; constraints on police work; attitudes and perceptions of minorities toward the police and vice versa; and attitudes of the various groups studied toward the possibility of violence in Denver, its likely causes, and possible participants. In general, police attitudes are similar to those of members of the dominant community on a number of issues, but they are quite different from those of blacks and Spanish-named persons. Police and members of the dominant community live in completely different worlds from these minorities with regard to attitudes toward the police and perceptions of police behavior toward minorities. This no doubt reflects the different experiences of whites and non-whites in the larger society.

In the final chapter, suggestions are made for improving police-community relations. The authors suggest that the strained relations between the police and minorities reflect the tensions of the larger society. It is possible that the list of suggestions put forth would make for improved relations in Denver, but they seem hardly adequate for the urgent task of police reform in general.

Neither book deals with the possibility of community control of the police as a means of forcing them to be more responsive to the needs of the people they ostensibly serve. The absence of democratic public control of the police in the United States has led to strains between them and the public. While the reforms suggested by Berkley would not necessarily transform police practices in the United States, *The Democratic Policeman* is an excellent critique of American police which should be read by police officers, public officials, and rank-and-file citizens.

Bureaucrats under Stress. By Richard P. Taub. Berkeley: University of California Press, 1969. Pp. 238. $6.75.

D. C. Dunphy

University of New South Wales

Students of bureaucracy will be delighted to find in Taub's book another contribution to the comparative study of the bureaucratic phenomenon, particularly as this book presents a study of Indian bureaucracy. They will also view with interest the latest move in the sociological game of one-upmanship that is going on in this field, that is, "My bureaucracy is worse than your bureaucracy!" Taub evidently thinks it is time for Crozier to yield the laurels to him. They will also look for any advances in conceptualization and method of studying bureaucracy in a field

where the early standards were set very high by Weber and Blau.

My own appetite was whetted even more when I read Cora Dubois's introduction to the book. She expresses great "admiration" for his book, his methods of data gathering, and "his critique . . . of the widely accepted Weberian model of bureacracy" (p. ix).

The study was conducted in Orissa, India, between 1962 and 1964. Taub appropriately calls for more empirical study of bureaucrats in their work settings and points to the particular need for studies of bureaucracy in developing countries where bureaucracy must initiate and carry through extensive programs of social change. India is also of particular significance because the Indian Administrative Service (IAS) is the descendant of the famous and widely copied Indian Civil Service (ICS) set up by the British.

Taub gives a concise and well-written account of the history of the ICS as a background to the study and then proceeds to describe his study of the civil servants in the small Indian capital city of Bhubaneswar, in Orissa. He lived in the community and gathered his data by interviewing civil servants. From these interviews he builds up a picture of the structure of the IAS, its rapid growth, and its extreme dependence on formalized procedures. He analyzes the background characteristics of the officers and traces the growing disillusionment and dissatisfaction of these men with the IAS. He explains this in terms of the change in the nature of the civil servant's job from the time of British rule to the present. He paints a picture of decreasing independence and diminishing personal power and prestige as the bureaucrat is squeezed between the increasing demands of centralized government, on the one hand, and the new technical experts on the other. In addition, their relation to the general population has changed so that their status and salaries are effectively lower. The result, Taub concludes, is a situation quite comparable to that traced by Crozier for French bureaucracy, that is, a preoccupation with slavish adherence to bureaucratic rules and a loss of commitment to the goals for which the service was created. The loss of motivation and the reliance on red tape are, however, more serious in a country where the bureaucracy is charged with the task of carrying through widespread and continuing social change.

The book gives a clear, concise, and interesting account of the development and functioning of the IAS. It is therefore a valuable addition to a developing comparative perspective on the nature and functioning of bureaucracy, but it is disappointing in two ways. Despite Cora DuBois's claims, it does not present a fresh viewpoint on Weber. (Taub's critique of Weber is to be found, by the way, in chap. 11, not in chap. 9, as claimed in the preface.) It is not original at this time to point out that the efficiency claimed by Weber for bureaucracy may be undermined by processes endemic to bureaucracy itself. Taub provides more valuable evidence of this principle, but he does not adduce any new principles. The book is also disappointing in that it does not contribute anything new in terms of method, and, in fact, the exclusive reliance on interviews makes the

book fall far short of the sensitive participant-observer model of exploration developed by Blau.

It is, however, a well-written, workmanlike effort. If not highly creative, it is an intelligent and thoughtful case study relevant to all those interested in bureaucracy, organization theory, and national development.

On Social Order and Mass Society. By Theodor Geiger. Translated by Robert E. Peck. Edited with an introduction by Renate Mayntz. Chicago: University of Chicago Press, 1969. Pp. x+242. $10.00 (cloth); $2.95 (paper).

Symbols and Social Theory. By Hugh Dalziel Duncan. New York: Oxford University Press, 1969. Pp. xx+314. $7.95 (cloth).

Don Martindale

University of Minnesota

The selections from the works of Theodor Geiger and the volume by Hugh Dalziel Duncan belong to the social action and symbolic interactionist branches, respectively, of contemporary social behaviorism.

An excellent introduction by Renate Mayntz has been added to the selections from the works of Geiger (1891–1952) on law and social order, ideology, and mass society. Geiger was born in Germany and migrated to Denmark after the rise of Hitler. He won major recognition in German and Scandinavian sociology. His personal, intellectual evolution moved from Marxism to a position close to that of Max Weber, with considerable influence from Georg Simmel.

The problems that occupied Geiger in the books from which the present selections were taken are those of complex societies. Law emerges as the primary institution of social control (in contrast to custom) in complex societies; ideologies are combat strategies of the subgroups that form when the socioethical unity of traditional society is destroyed; mass societies mount special threats to the autonomy of the individual.

A major theme running through the works by Geiger is that individualism can better be preserved against the forces of complex society by reliance on law rather than on custom, by the individual cultivation of scientific detachment as against ideological commitment, and by rigid ethical neutrality or value asceticism as against the tribal parochialism of nationalism. The ideas developed by Geiger are logical extensions of notions such as those advanced by Max Weber in his essays on "Science as a Vocation" and "Politics as a Vocation."

Possibly, Duncan's objective is similar to Geiger's, that is, the preservation of individuality against the forces of our mass world, though in Duncan's case this would appear to be accomplished through art or perhaps the practices of social life as if it were an aesthetic activity. But here the similarity ends, and while both make considerable contributions to

contemporary thought, Geiger's contribution is in the form of clarification and Duncan's is in the form of confusion.

A major part of *Symbols and Social Theory* consists of discussions of such Europeans as Max Weber, Tönnies, Pareto, Sorokin, Durkheim, Frazer, Malinowski, and Spencer and various Americans such as George Herbert Mead, Kenneth Burke, and Herbert Blumer. These discussions rest implacably on the stereotype of European sociology as authoritarian, closed, and anti-individualistic and American sociology as democratic, open, and equalitarian: "American students of social theory, and certainly those trained in the traditions of the Chicago School, who read Tönnies or Durkheim, to say nothing of Weber, Marx, or Frazer, often feel they have walked through Alice's Looking Glass. In this authoritarian world the familiar commonplaces of our democratic social thought become alien and even grotesque" (p. xvii). The unusual powers acquired by an author who operates with stereotypes quickly become apparent from the following sentence: "European social theory assumes that order is reached through 'legitimations' (Weber), 'rights' (Marx), 'customs and traditions' (Tönnies), 'yearnings for authority' (Nietzsche), the 'tendency for oligarchy' (Michels), or 'a need for uniformity' (Pareto)" (p xvii). It is certainly a signal achievement to misrepresent partially or completely the thought of no less than six major social thinkers in a single sentence

Duncan's presentations of the ideas of various American and European sociologists are so generously interspersed with interpretations, extrapolations, and criticisms that it is virtually impossible to ascertain the original authors' meanings without consulting them directly. Moreover, Duncan sustains his arguments throughout by generalizations such as the following, taken at random from his concluding arguments:

> Dreams dramatize our problems; they are self-written plays in which the ego seeks to solve problems in forms which make possible the confrontation of those problems. [P. 265]
>
> In a life dominated by conflict between saving and spending, we save in order to go into debt. [Pp. 265–66]
>
> The mysteries of rules are personified in the figure of umpires. . . . We watch them in awe. . . . In the dignification of the umpire we dignify the game. [P. 266]
>
> As social beings we enjoy being hated. . . . We even enjoy hating ourselves. [P. 267]
>
> Mystery is the obverse expression of the disrelationship among classes, while guilt is the reverse expression. Between mystery and guilt there is embarrassment and shame. [P. 267]

The work is a virtual mine of such gems.

In his preface, Duncan states that "for the past thirty years I have been trying to create a sociological model of the symbolic act. . . . I define my sociodramatic model of symbolic action as social action" (p. vii). In his last chapter, he offers the following compact summary of his developed theory:

> When we use the mystifications of art, science, and religion as a typology of social experience and ask: Where and when in society are art, science, and religion used, in what kinds of act, enacted in what kinds of roles, in what communicative forms, and to achieve what kind of order in social relationships? Our abstractions become *sociological* abstractions, formed by a theory of action as *action in society*. This theory, now developing in American sociology, is based on the view that symbolic action in society must be thought of as dramatic action, as against religious thought of action as ritual, or scientific thought of action as equilibrium. [P. 287]

When Duncan puts his case in this manner, he has a right to be mystified. As far as I can make any sense of this, he appears to be saying that when we apply mystifications to themselves the mystery is compounded and we become truly sociological. Perhaps in his next book Duncan will explore the logic of mystification. One wonders whether two mystifications, mystifying to the same mystification, are mystifying to each other.

Since Duncan feels that only a dramatistic model is appropriate to true sociology, it is unfair to sum up *Symbols and Social Theory* in other than analogical terms. The volume impresses me as a virtuoso performance by a tone-deaf, self-taught country musician laboriously picking out tunes on a swinette.*

(*EDITORIAL NOTE: A swinette is a mythological instrument appearing occasionally in American folk humor. It is generally defined as six strings stretched across a pig's ass—you pick it with your teeth.)

Oeuvres. By Marcel Mauss. [In French] With a presentation of the edition by Victor Karady. 3 vols. Paris: Editions de Minuit, 1968. Pp. liii+2,105.

Ron Westrum

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Marcel Mauss (1873–1950) was a French sociologist and anthropologist who exercised a very large influence over the development of French sociology and ethnography. A nephew and collaborator of Durkheim, he was perhaps Durkheim's most important pupil and continuator. Although most American sociologists are familiar with his *Essay on the Gift*, few have any idea of the vastness and importance of his work. Both Georges Gurvitch and Claude Lévi-Strauss acknowledge the importance of Mauss's influence for their own work. Mauss trained a great many French ethnographers, many of whom later did excellent fieldwork, although he never did any significant fieldwork himself. Like Durkheim, his strength lay in the ability to synthesize materials that others had gathered.

With a truly encyclopedic knowledge of ethnological materials (a favorite phrase of his students was, "Mauss knows everything"), he wrote a number of important essays, of which his *Essay on the Gift: A Primitive Form of Exchange* is the masterpiece. The word "essays" is used

advisedly: Mauss was forever sketching out new areas and new approaches to ethnography without putting anything in definitive form; his essay on the gift is the closest he came to a finished work. His brilliance is rather in seizing on what was important, sometimes breaking completely fresh ground, sometimes suggesting that a neglected subject deserved more attention than it had received.

The present publication reflects very well these strengths and weaknesses. It is a collection of Mauss's writings which pulls together materials written over a period of four decades. Besides several major essays, it includes dozens of texts which have a bearing on the subject matter of the essays, and thus pulls together Mauss's thinking on a particular subject, often from widely different sources. These include parts of debates, letters, extracts from journals (principally from the *Année sociologique*), lectures, and so forth. This topical organization is a great aid for the scholar who would otherwise have to do considerable searching to assemble such materials.

Unfortunately, however, this edition does not include Mauss's most important essays, on "the gift," "body techniques," "the concept of the person," and his superb paper on "seasonal variations in the life of Eskimos." These essays and others are contained in the already published *Sociologie et anthropologie* (4th ed. [Paris: Presses universitaires de France, 1968]), which also has the virtue of an introduction by Claude Lévi-Strauss.

The three volumes are entitled *The Social Functions of the Sacred, Collective Representations and the Diversity of Civilizations,* and *Social Cohesion and the Divisions of Sociology.* The first volume has sections on the general study of religions, totemism, sacrifice, and on "prayer and oral rites." The last mentioned work was to have been Mauss's doctoral essay and, like so many of his works, was never finished. This volume represents what the editor calls Mauss's "precocious period," concerned largely with the history of religions. It consists of works that follow the orthodox Durkheimian approach. It should be noted that this volume as well as the others contain a number of critical articles which appeared in the *Année sociologique* which more or less represent the official attitude of the Ecole sociologique, of which Durkheim was the head, toward various writers who were not part of the school.

Like the first volume, the second deals with the sociology of religion and also myth, culture, thinking, magic, and civilization. The volume includes the important essay, coauthored with Durkheim, on "primitive classification," an essay which constituted an important chapter in the sociology of knowledge but which is unfortunately now somewhat dated. Other essays deal with Australian magic, the African legend of Abraham, and the "theory of civilizations," and include several long critiques of ethnographers like Steinmetz and Wundt.

The third volume relates Mauss's ideas about the nature and functions of sociology, including the article written with Paul Fauconnet on sociology for *La grande encyclopédie.* There are several short articles on

the history of sociology and ethnography, with numerous bibliographical notes. Finally, it contains Mauss's essay on the concept of the nation, perhaps his only writing on political sociology. A complete bibliography of Mauss's works is at the end of the third volume.

Mauss's strength was to be a pioneer and critic although not a writer of the definitive work. The present collection is exceptionally rich, especially for those interested in the history of ethnography. Its appeal will, of course, be somewhat less for the behavioral sociologist in a hurry, who may find the richness of detail a bit overwhelming.

Professing Sociology: Studies in the Life Cycle of Social Science. By Irving Louis Horowitz. Chicago: Aldine Publishing Co., 1969. Pp. 365. $9.75.

Randall Collins

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Irving Louis Horowitz occupies a middle position in the recent history of anti-Establishment sociology between the now mythical C. Wright Mills and the younger generation of rebellious graduate students and faculty. Unlike the younger radicals, Horowitz came of age in the period of social science affluence, and his own career suggests how even a sociologist with an anti-Establishment tongue can have quite a prosperous career as professor, writer, magazine editor, world traveler, and conference goer. The result is that Horowitz continues to talk like a gentleman and a scholar, adds all the appropriate footnotes, and launches his anti-Establishmentarianism from a stance of not too disrespectful left liberalism. Indeed, since everything is grist for the sociological mill, one can make quite a respectable career out of the intellectual materials of a discussion of the sociological Establishment.

Professing Sociology is Horowitz's collected papers of the 1960s. It includes a number of papers on functionalism, Malinowski, Weber, and the sociology of knowledge, but these are something less than major theoretical contributions. "Consensus, Conflict, and Cooperation," with its rough contrast of functionalism and "conflict theory," is perhaps the best of the lot, adding one more brick to the fusillade that has all but shattered the functionalist greenhouse. But like the other papers, it offers little help in how a conflict *theory* might actually be constructed; for that, the varied works of Mills himself, Barrington Moore, Bendix, or a return to the classics of Marx, Weber, Michels, Sorel, and Mannheim is far more useful. For all his name-dropping, Horowitz is not entirely the master of this sort of material. Thus, we find such curious statements as the reference to Sumner as a "reform" sociologist (p. 142) or the odd contrast of Weber as the general social system theorist as against Durkheim and Pareto (p. 190).

Such criticism is perhaps unfair. Horowitz presents himself here basi-

cally as the house journalist of sociology, the theoretical references being flashed as a badge of membership in the fraternity, and our only appropriate standard is to ask how good a journalist he is. As a reporter of the hot news stories of the social science world, he is quite adept. Thus, we are interested to read how Johan Galtung blew the whistle on Project Camelot in Chile, details of the Michigan State–CIA scandal, learned speculations on the authenticity of *Report from Iron Mountain*, and a description of the much scarier (because undeniably authentic) *Report of the Panel on Defense Social and Behavior Sciences* by the Defense Science Board of the National Academy of Sciences. When Horowitz moves over into the role of columnist and news commentator (a role often overlapping with the manifest role of conference speaker), he is also sometimes quite perceptive. He points out, quite correctly, the involvement of rather minor-league social scientists in government work like the Michigan State training of South Vietnamese secret police and the opposition from traditionalistic elite scholars to such prostitution of the university's autonomy. He notes the dangers of increased government control over social science research resulting from the cancellation of Project Camelot. He makes the important observation that ideological debates over functionalism have missed the implications of functionalism's usability from *various* political perspectives; that to speak of "what the system needs" is *inherently* to make political judgments, from whatever position, and hence one must get outside the functionalist frame of reference if one is to be able to transcend political biases.

But it is not clear why, on these grounds, Horowitz wants to leave functionalism (although, of course one cannot be an anti-Establishment sociologist if one stays within the very citadel of Establishment theory). For Horowitz does not want to transcend political judgments and has no use for generalized sociological knowledge as an end in itself. He sees all the obvious abuses in current sociology resulting from its incorporation of loyal (liberal) Americanism in its fundamental perspectives and from work for RAND Corporation, Project Camelot, etc.; he sees the function of the "value neutrality" rhetoric in legitimating all this. But Horowitz does not consider how Weber's value-neutrality position is not a description of the facts but, rather an *ideal* for social scientists to emulate, and indeed an ideal that has been constantly violated while it has been given lip service. Weber's historical work, as well as the work of the best modern researchers, shows what can be done toward developing a powerful theory if one in fact *does* commit oneself to this serious self-discipline.

Horowitz will have none of this, because he remains first and foremost a committed liberal and only secondarily a social scientist. He still wants an applied sociology, only he wants it from a position somewhat further left than we have been accustomed to. Thus, he speaks with glowing rhetoric to various congressional committees in favor of the "social indicators" proposal, at the very time when more detached observers have noted the further centralization of political authority in America that this would occasion, the legitimation it would provide

for interfering in people's lives under the guise of a "scientific" treatment of "social problems," and the fund of information it would create for the not-too-unthinkable exploitation by our ever-expanding police agencies. Nor does Horowitz see the baleful effects that exclusively "applied" orientations have had on the development of genuinely powerful explanatory theories in sociology. No, Horowitz's preferences are not going to do anything to improve the quality either of sociological research or of American politics. But he does provide some information on their interaction, and that at least is a start.

Micro-Macro Political Analysis: Accents of Inquiry. By Heinz Eulau. Chicago: Aldine Publishing Co., 1969. Pp. 390. $8.50

Personality and Politics. By Fred I. Greenstein. Chicago: Markham Publishing Co., 1969. Pp. 200. $5.95.

Edgar Litt

University of Connecticut

It is an axiom of comparative politics to note the similarities and differences of the country under investigation. The differences between Fred Greenstein's *Personality and Politics* and Heinz Eulau's *Micro-Macro Political Analysis* are more obvious than anything uniting them. Greenstein has written a lean book, meaty in synthesis, about politics and personality—a long-term concern of his. Eulau presents us with an anthology of his collected works ranging from tight, empirical, and coauthored studies of legislative roles to more reflective solos about the work of Harold Lasswell, the germination of the "behavioral-movement," and the maddening gulf between liberalism and science. Except for an article by Eulau entitled "Notes on Power and Personality," my search for comparability is likely to be futile, on one level, unless I grasp at stray facts such as the observation that Greenstein was once a student of Eulau's at Antioch College.

However, at another level, these two books do have much in common. They are written by two of the leaders of modern or behavioral political science (yes, I too wish there was another identifying term); each has become a major figure of his generation and a recognized intellectual leader of the profession. Each man has insisted on the scientific study of politics, and at their best (which is often), their insistence has produced work of high quality and rich imagination. Moreover, both Eulau and Greenstein generously acknowledge their debts to others (Harold Lasswell in both cases) while becoming their own men in scholarly productions.

Those in search of "relevant" political science (a search I strongly support) will find little of use to them in these works. Yet it is those who have pivoted their careers on the hardness and technical certainty of modern political science who will, I fear, be most forlorn after judicious

reflection. For, taken on their own terms and as major contributions, in each case there is a mind at work that ultimately refuses to settle for the pat credo of his own liking. Like Jacob and Esau in the biblical tale, each man wrestles with the certitude of science (a certitude we now know to be as devastating as that of passion or ideology) and breaks the hammerlock of bondage to scholarly authority.

The Eulau book is divided into five parts that deal with theory, method, linkages (primarily the application of role and class analysis), structures, and interpretations. After reading 390 pages of articles by Eulau and others, discussing them is a little like asking a reviewer to summarize Tolstoy's plot in *War and Peace*. The fairest thing to do is to recommend Eulau's book to graduate students in the numerous courses where the selections would be useful. But fairness is not enough here, and I at least find Eulau's "Borodino" in the concluding, interpretive section. It is a long way from the certitude of *The Behavioral Persuasion,* a small book written by Eulau a few years ago and one intimately related to the early sections of this book, to the broad-gauged concerns about which Eulau reflects here. In the critique of Lasswell's developmental model and the exciting recollections of intellectual searching in Washington, the core of explanation and experimentation that propelled behaviorism to the center stage of the academy becomes visible to those machine taught and machine thought in the bureaucratization of contemporary higher education. When, in a piece on science and liberalism, Eulau comes around to saying that there is an inevitable gulf between the quest for a science and the public uses of political science, the road is open to an intellectual pluralism in which no persuasion (behavioral or otherwise need deter those who would apply their knowledge to political problems or to the criticism of a pseudo-objectivity in which scholarly and public problems are hopelessly confused.

An analogous object lesson can be drawn from *Personality and Politics*. Its organization is deceptively simple. After setting the stage and taking account of objections to personality and politics analysis, the author considers psychological analysis of single political actors (such as the Georges' account of Woodrow Wilson), types of political actors (herein a major emphasis on the authoritarian personality), and aggregate effects of personality characteristics on political systems. Greenstein had many of these interests a decade ago and has written on many of the themes explored between these covers in professional journals. In a simple-minded way, there is little here that he has not said before.

However, the critical point is that, like Piaget, whom he admires so much, Greenstein refuses to repeat the errors of the national character and trait studies and claim the scholastic road to personality-political analysis linkage or to abandon the scientific validity of personality explorations. On the contrary, he retains the capacity for surprise in analysis and interpretation, a capacity that ought to be the reason for the wide respect this book will enjoy—as it surely will. Put differently,

beyond expertise it is the concern with the nuances of personality theory applied to deviant but critical political analysis that marks this work. *The Charm of Personality and Politics* would be an apt title insofar as explanation goes, were it not for the fact that the public consequences of emotion have been so devastating in this decade.

Why a book engages the mind is as important as the contextual stuff of authorship. And the interpretiveness in parts of Eulau's book and all of Greenstein's rich book ought to be emphasized in the review, reflection, and uses or misuses by the next generation of political scientists.

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In Memoriam: William Lloyd Warner, 1898–1970

William Lloyd Warner was one of the great men of social science. With the mind of a scientist and the heart of a great hunter, he tracked down those powerful systems of social privilege and status—caste and class—within which all of us are trapped.

He stood alone in our time, the greatest of the empiricists. His studies of the social class systems within American society constitute a model for man's objective study of himself. Warner examined society just as one studies an organism in the laboratory, without prejudice and without theoretical dogmatism. He was determined to understand America as it was, as a functioning system of socioeconomic classes.

His work therefore is admirable most of all for its objectivity. In this he had no peer in his day. And he had no peer in *the scope of his studies.* He sought to master the complexities of the whole system, not only of social stratification, but also of economic institutions and (in his greatest work, *The Living and the Dead*) of people's traditions.

His stature was perhaps not fully appreciated by his contemporaries. But in the years following the publication of the first volume of the Yankee City Series, the dominant current in American sociology was the study of social classes. In the two leading journals, during those twenty years, there was only one major emphasis in research, the study of social class behavior.

His influence has spread all over the world and to all the social sciences. Not only sociology and anthropology owe him a great debt, but also political science, economics, and psychology. In the latter discipline, his article "The Society, the Individual, and His Mental Disorders," published more than thirty years ago, inspired the writing of many of the best works on the relationship between culture, social structure, and individual behavior. His creative influence extended to research in psychiatry, epidemiology, education, child development, industrial organization, legal research, and American history.

One was most impressed by the vigor of his mind, by his great zest and enthusiasm for the study of the most complex of all realities, man. To the end, he was exploring new fields. *Navigare necesse est, vivere non necesse.*

Some things in life can be neither avoided nor mastered. They must be endured. And Lloyd knew how to endure. But his was the spirit of those who explore. *Navigare!*

ALLISON DAVIS

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An Empirical Study of Military-Industrial Linkages[1]

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Military-industrial relations are examined from both the elitist and pluralist perspectives on power. Neither theory readily accounts for all of the empirical data. On the one hand, elitist theory explains the relatively high level of military spending after World War II as well as the deep dependence on military expenditures among some large corporations. However, both the regression and input-output analyses indicate that the economy does not require extensive military outlays. Indeed, there is some evidence that most corporations would be more prosperous if the government shifted to nonmilitary expenditures. These discrepancies suggest that a third interpretation may be in order. Based on the assumption that a growing division of labor leads to increasingly specialized needs and vested interests, the hypothesis of compensating strategies is presented. Under this notion, political decisions that run counter to the interests of the majority will occur even if the government is not dominated by a small number of elite interest groups. Rather, such a pattern may result from a process in which the diverse interest groups seek to maximize their net gains. This alternative perspective is illustrated by the composition of Senate committees.

A major controversy exists in macrosociology over the forces which influence national policy in the United States and other advanced industrial societies. On the one hand, the elitists argue that a relatively small group of people, representing a narrow range of interests, determine national policy across a range of domains including foreign affairs, military spending, and major domestic programs. By contrast, the pluralist school views national decision making as a process influenced by a broad and diverse array of interest groups, with no single group or set of groups powerful enough to consistently dominate the national political system. Although the two schools are not diametrically opposed, as Kornhauser's comparison (1968) suggests, they are contradictory on a number of counts.[2] However, despite the fact that national political systems are a

[1] I am deeply indebted to Mrs. Lynn K. Hansen for her invaluable research assistance and critical suggestions. The paper also benefited from a critical reading by Mr. Gordon W. Clemans and helpful suggestions from Professors Herbert L. Costner, Richard M. Emerson, and S. Frank Miyamoto. In addition, I received many comments from colleagues and students in the Center for Studies in Demography and Ecology, University of Washington. The figures were prepared by Mr. Charles B. McVey, former draftsman in the Center for Studies in Demography and Ecology.

[2] Both Rose (1967) and Pilisuk and Hayden (1968) provide excellent reviews of the rather extensive literature developed by both the elitists and pluralists. There are

central concern in sociology, efforts to untangle the conflicting theories often appear more like ideological debates than contributions to scientific knowledge.

There are two special obstacles to overcome before the contradictory implications of elitism and pluralism can be resolved. First, scholarly positions on this subject must be judged by their ability to develop a comprehensive system that takes account of the available information rather than by their implications for contemporary politics. Because of the political overtones, both the elitists and pluralists approach the issues polemically, as if total rejection of the rival theory is the only possible way such a dispute can be resolved. It is true that some scientific controversies are eventually resolved when a body of empirical research persistently supports one theory and is incompatible with another.[3] But rival theories in the social sciences often turn out to be incomplete and distorted parts of a greater truth, such that neither is consistently supported by empirical research. The theoretical controversy over heredity versus environment, for example, is now rejected because it involved a false and unnecessary polarization.

The second major obstacle stems from the difficulties of conducting empirical research relevant to these theories. Not only are sociologists unable to make direct observations on the decision processes, but it is difficult to design research that encompasses the broad range of political events covered by these conflicting theories. No single research effort can be sufficiently comprehensive or critical, for example, to provide a conclusive test of the Marxist argument that capitalism generates a surplus that can only be used up through war and waste (see Baran 1957; Baran and Sweezy 1966). As a consequence, overinterpretation of the results is all too easy. Actually, each empirical study must be viewed only as contributing to an aggregate of investigations that deal with national power.

MILITARY-INDUSTRIAL LINKAGES

This study focuses on one facet of the theoretical controversy, the relation between military expenditures and large corporations in the United States, the so-called military-industrial complex. According to one leading elitist (Mills 1959, p. 276), "American capitalism is now in considerable part a military capitalism, and the most important relation of the big corporation to the state rests on the coincidence of interests between military and corporate needs." Mills goes on to assert that there is a

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some particularly useful evaluations of the power-elite theories of C. Wright Mills. See the criticisms by Bell (1958) and by Gracey and Anderson (1958), as well as the extensive list of reviews and evaluations compiled by Horowitz (1963).

[3] I assume that empirical research also supports those implications on which the two theories do not differ.

"coincidence of interest between those who control the major means of production and those who control the newly enlarged means of violence." Pluralists also recognize the existence of a military-industrial complex (see, e.g., Rose 1967, pp. 94–98), but they view this as but one of many interest constellations. Accordingly, they deny the elitist claim that this particular complex has unique breadth, scope, and coordination (see the review by Pilisuk and Hayden 1968).

Several facets of the dispute can be submitted to empirical study. Indeed, unless one claims that power and influence are unrelated to position in the social structure, it is clear that many of the issues raised by the elitists and pluralists call for a quantitative approach, dealing with matters of degree and frequency rather than absolutes. How extensive are the overlapping interests of major institutions? To what degree, and in what domains of national policy, do these connections modify and influence the decision-making processes? Has there been a substantial change in these relations over time?

There is little reason to doubt that a "military-industrial complex" exists if by this phrase is meant a set of commonly shared interests between the military and some major corporations. Certain striking features of these linkages, recognized by both theoretical schools, are: the interchange of personnel between the military and their corporate suppliers, the network that exists within the business sector, and the role of large corporations as suppliers to the military.

Circulation of Personnel

The 100 largest primary military contractors in the 1957–58 fiscal year, recipients of three-quarters of the money awarded, employed 218 former generals or admirals (Janowitz 1960, p. 376). Altogether, these 100 contractors employed some 768 former military officers who had retired with at least the rank of colonel or naval captain. The linkages have increased several fold during the past decade. The 100 largest primary military contractors in the 1968 fiscal year employed 2,072 former military officers who had been colonels, naval captains, or higher.[4] Excluding five companies for which data are not available, this means an average of twenty-two former officers per major contractor.

The increasing interlock between suppliers and the military during the decade suggests the possibility of a growing community of interest between the two sectors of the society. Personal contacts between high-ranking officers and their former colleagues can affect negotiations, particularly when the military officers themselves may soon seek employment from the corporations after their military retirement (U.S., Congress, Senate 1969, p. S3072–3). Admiral Hyman Rickover has described

[4] Based on employment on February 1, 1969 (U.S., Congress, Senate 1969).

a number of ways that military contracts may be negotiated to maximize the contractor's gain, for example, contract manipulation, research and development advantages, patents, shoddy procedures for cost accounting, and the like (Joint Economic Committee 1968).

Coordination Among Corporations

Underlying the power-elite thesis is the proposition that large corporations operate in concert, coordinating their activities and interests. "Would it not be strange," Mills (1959, p. 123) asks about large businesses, "if they did *not* consolidate themselves, but merely drifted along,

TABLE 1

OUTSIDE BOARD MEMBERS OF THE MORGAN GUARANTY TRUST COMPANY, NEW YORK, 1965, BY PRIMARY COMPANY AFFILIATION

Corporation (and Rank)	Principal Activities
American Machine and Foundry (150)	Bowling, leisure time products, specialty industrial machinery
American Telephone and Telegraph (*U*-1)	"Bell" system, electronics
Bethlehem Steel (18)	Steel
Campbell Soup (93)	Soup, other food products
Coca Cola (68)	Soft drink syrup, juices
Columbia Gas System (*U*-10)	Natural gas distributor
Continental Oil (39)	Crude oil, fertilizer, petrochemicals
E. I. duPont de Nemours (12)	Chemicals, synthetic fibers
Gillette (204)	Razors, wave kits, pens
International Nickel (*F*-70)	Nickel, platinum, copper
New York Life Insurance (*I*-4)	Insurance
Pennsylvania Railroad (*T*-2)	Railroad
Procter and Gamble (24)	Soap, foodstuffs from vegetable oils
Singer (60)	Sewing machines, calculators
Standard Oil of New Jersey (2)	Petroleum
J P Stevens (86)	Textiles
State Street Investment	Mutual fund

NOTE.—Data not available on two additional organisations represented on the bank's board: Bechtel Corporation; The Duke Endowment. Letters *F, I, T*, and *U* indicate corporation is ranked, respectively, as foreign, life insurance, transportation, or utility. All other rankings refer to 500 largest industrial corporations.

SOURCE.—Rankings from *Fortune* (1965*a*, 1965*b*); principal activities from Standard and Poor's (1965).

doing the best they could, merely responding to day-to-day attacks upon them?" One indicator of this elite community is the degree of interlocking directorships among large corporations. "As a minimum inference, it must be said that such arrangements permit an interchange of views in a convenient and more or less formal way among those who share the interests of the corporate rich."

Interlocks among boards of directors is a major topic for research in itself. However, an illustration based on leading banks does give the reader a perspective on the kind of linkages that do occur and the economic resources involved. Listed below in table 1 is the board composi-

tion of the fifth-largest New York City bank in early 1965. The board represents leading corporations from many sectors of the national economy, creating the potential for a rather extensive and diverse communication network. In parentheses, alongside the name of each corporation, is its national rank. The sweep of interlocks is understated, actually, since only the primary affiliations of outside members of the bank board are shown.

Altogether, the boards of the seven largest New York City banks in 1965 include officials from fifty-one of the largest 500 industrial companies. There is a particularly heavy concentration from the fifty largest companies, with nineteen represented on the boards of at least one of the seven banks. The boards also have officers from some of the largest transportation, merchandising, and life insurance companies.[5] Total employment in 1964 among the companies represented on these bank boards range from 400,000 to 1.65 million, with the median bank board representing the employers of 1.5 million.[6]

Major Contractors

Clearly a segment of American industry is deeply dependent on the military for survival. Attempts by the aircraft industry, for example, to diversify and reduce their dependency on the government have been unsuccessful for the most part (Weidenbaum 1963, pp. 79–83). Even more significant, major industrial corporations obtain a lion's share of the largest primary military contracts. Three-fifths of the fifty largest industrial corporations (as measured by sales in 1967) are among the 100 largest military contractors for the 1968 fiscal year (see table 2). Altogether, sixty-eight of the 100 biggest contractors were among the 500 largest industrial corporations in the United States. Moreover, the remaining thirty-two contractors include two leading utilities (ranking first and forty-third in assets among U.S. utilities) and four leading transportation companies (ranking among the leading fifty in operating revenues). In short, three-fourths of the largest military contractors are major corporations.

Implications

The results reported above, like those in a number of earlier studies, are suggestive of a close tie-up between the military and at least some industrial companies. But these reports are peripheral to an evaluation of

[5] Among the fifty largest in each category, there are two utilities, three transportation, five merchandising, and six life-insurance companies directly linked with one or more of these banks.

[6] Based on employment figures reported in *Fortune* (1965*a*, 1965*b*, 1966).

the two theoretical approaches. For pluralists and elitists do not differ on the question of whether there is a close tie-up between some industrial companies and the military, rather they differ on the *magnitude* of the interlock and its *causes*. In order to evaluate these approaches, it is necessary to examine the relative importance of military spending for large businesses. Pluralists view military-industrial relations as but one of many powerful influences on government policy; whereas the elitists see this as a dominant and pervasive influence caused by an inherent necessity for the survival of a capitalistic system.

TABLE 2

OVERLAP BETWEEN 100 LARGEST PRIMARY MILITARY CONTRACTORS AND 500 LARGEST INDUSTRIAL CORPORATIONS, 1968

Rank of Industrial Corporation	Number among 100 Largest Contractors
1–50	29
51–100	11
101–150	5
151–200	7
201–250	3
251–300	4
301–350	5
351–400	1
401–450	1
451–500	2
Other*	6
Total	74

SOURCE.—One hundred largest military contractors in 1967–68 fiscal year from *Congressional Record* (U.S., Congress, Senate 1969). Largest 500 industrial corporations and other leading nonindustrial corporations obtained from *Fortune* (1968).

* Includes nonindustrial companies that are among the fifty largest commercial banks, life insurance companies, merchandising firms, transportation companies, and utilities.

DEPENDENCE OF INDUSTRY ON A WAR ECONOMY

Military Contracts

As indicated above in table 2, the very largest corporations obtain most of the major military contracts However, the issue now is the importance of these contracts for such corporations. Both Weidenbaum (1965, pp. 113–14) and Lapp (1968, pp. 186–87) have demonstrated that the ratio of military contracts to total sales varies widely among leading contractors. In order to obtain some estimate of the role of military expenditures for large businesses generally, it is more appropriate to focus on

leading industrial companies in the the nation rather than on simply th leading contractors.

Among the fifty largest industrial companies, all with sales well ove $1 billion in 1967, primary military contracts vary greatly in significanc (see table 3). Contracts obtained by General Dynamics, the largest mili tary contractor in the 1968 fiscal year, were nearly equal to its total sale in 1967 (the ratio is .993). Another corporation has a contract-sales rati of more than .75; one has a ratio of .60; and there are seven others witl ratios exceeding .25. Twelve of the fifty largest industrial companies, o the other hand, have ratios of .04 or less—even though they are amon the 100 largest military contractors. Military ties are very minor for a

TABLE 3

RATIO OF MILITARY CONTRACTS TO TOTAL SALES AMONG 100 LARGEST INDUSTRIAL CORPORATIONS, 1968

Ratio	Number: 50 Largest Corporations	Number: 50 Next Largest
75 and above	2	0
.50–.74	1	2
.25–.49	7	4
.10– 24	1	5
05– 09	6	24*
Under .05	33	15

SOURCE.—See table 2.

* Ratios for all twenty-four of these companies are estimated in terms of maximum possible values. Undoubtedly, most would have lower ratios if actual contract data were available (see text).

additional twenty-one companies that are not listed among the top 10(contractors. Even if we make the extreme assumption that the contracts received by these companies are only $1,000 less in value than the one-hundredth-largest contractor, the ratio of military to total sales woulc be between .03 and .04 for eleven companies and .02 or less for ten companies. Altogether, then, thirty-three of the fifty largest industrial corporations have contract-sales ratios of .04 or less.

Among the fifty next largest industrial corporations, there are thirty-nine that are not on the list of 100 leading military contractors in 1968. Again making the extreme assumption that each of these holds contracts that are only $1,000 less than the one-hundredth-largest military contractor, the ratios would be .04, .05, and .06 for, respectively, fifteen, nineteen, and five of these corporations (table 3).

It is clear that the majority of the largest industrial corporations derive only a small portion of their total business from primary military con-

tracts. Moreover, there are numerous merchandising companies that do not enjoy any direct benefits from military contracts. Among these companies, there are twenty-one with sales equal to at least the one-hundredth-largest industrial company (eight have sales greater than the fiftieth-largest industrial company). Undoubtedly, stores are located in communities that receive sizable military contracts, but military expenditures per se, as opposed to government spending in other sectors, is probably not particularly beneficial to major retailers.

Although the data reported above fail to support the notion that American industry is deeply dependent on a military economy, the results are hardly conclusive. First, they fail to take into account the indirect consequences of military spending for the nation's major corporations. Large corporations may supply many of the primary contractors and thus benefit from the demands created by military expenditures. Steel mills, for example, produce the armor plate used in tanks or needed for the hulls of war vessels. Further, there may be general indirect benefits that are based on the prosperity generated by military expenditures. If military spending pumps large amounts of money into the economy, then consumer and industrial demands may be of substantial benefit to all sectors of the economy, not merely the "munitions makers." Finally, military contracts may still be very important if they are unusually profitable or utilize plants and equipment that might otherwise be idle. For General Motors, the largest industrial corporation in the nation and the tenth-largest military contractor, the ratio of military contracts to total sales is only .031. However, the contracts do amount to nearly two-thirds of a billion dollars, a sum that can hardly be considered trivial.

In short, the data fail to support the hypothesis that large American businesses are deeply dependent on military spending. The results are inconclusive, however, because there may be substantial indirect benefits for a broad spectrum of American businesses that are not military contractors.

Regression Analysis

Regression analysis provides another method for estimating both the absolute and relative influence of military expenditures on *total* corporate income. The dependent variable, Y, is corporate income after taxes for each year between 1916 and 1965. Two independent variables are used: government expenditures in each year for "major national security" (X_1); government expenditures that are not for national security (X_2). Although the latter includes veterans benefits and other costs reflecting earlier military efforts as well as space explorations, X_1 essentially measures current military expenditures over which the government has some option, and X_2 reflects the nonmilitary expenditures of the government.

Overall, there is a high association between corporate income and the two facets of government expenditures; the coefficient of multiple determination $R^2_{y.x_1x_2}$, is .88. This is not altogether surprising, given inflationary trends through the period as well as the necessary relationships between corporate income and government expenditures. On the zero-order level, corporate income is more closely linked to nonmilitary expenditures than to military spending (see table 4). Even more significant, military

TABLE 4

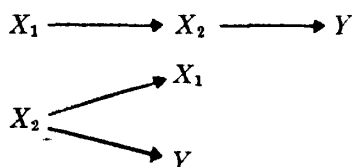
REGRESSION ANALYSIS: CORPORATE INCOME AS A FUNCTION OF FEDERAL GOVERNMENT EXPENDITURES, 1916–65

Variable	r	b
YX_1	68	30
YX_2	.93	.77
X_1X_2	76	1 42
$YX_1 \cdot X_2$	− 08	− 02
$YX_2 \cdot X_1$	82	89

SOURCE.—X_1 based on U.S Bureau of the Census (1960, 1965*a*, column Y358, 1965*b*, table 534), X_2 based on U.S. Bureau of the Census (1960; 1965*a*, column Y357 minus column Y358); Y based on U.S. Bureau of the Census (1960; 1965*a*, column Y283 minus columns Y288 + Y289), and 1962–1965 data based on U.S. Bureau of the Census (1968, table 694)

NOTE.—X_1 = federal government expenditures for national security (in millions of dollars), X_2 = federal government expenditures not for national security (in millions of dollars); Y = net corporate income after taxes (in thousands of dollars).

expenditures have less impact on corporate income than does an equivalent amount spent by the government on nonmilitary items (compare b_{yx_1} with b_{yx_2}). Both the correlation and regression of corporate income on military expenditures are virtually nil after nonmilitary spending is taken into account. By contrast, the partial correlation and regression for income on nonmilitary expenditures remain very high, .82 and .89, respectively.

Following the procedures described by Blalock (1961, 1964) and Fendrich (1967), the zero-order and partial correlations fit two models. The first one shown below is supportive of Mills, whereas the second model is not. Both models suggest that: $r_{yx_1 \cdot x_2}$ be approximately zero; that r_{yx_1} be lower than either r_{yx_2} or $r_{x_1x_2}$; and that r_{yx_1} be approximately equal to the cross product of the other two correlations. All of these conditions are met. Without additional variables, it is impossible to distinguish between them.

Even under the first causal model, however, efforts to increase corporate income would be directed towards raising nonmilitary spending rather than the military budget. First, it is necessary to recognize that the two facets of government spending operate somewhat independently of each other (r^2 is .58). This means that there are other factors influencing nonmilitary spending. Since the regression coefficients indicate that a unit change in nonmilitary spending will increase corporate income far more than will an equivalent military expenditure, the first model would still suggest that nonmilitary spending receive preference by those seeking to raise corporate income. In short, during the past fifty years a dollar spent on the military appears to have generated far less corporate income than a dollar spent by the government in other realms.

Although the results fail to support the contention that corporate income is deeply dependent on military expenditures, again the analysis is not conclusive. For one, the relationship between government spending and corporate income involves some feedback, a complexity not found in the models reported above. In addition, other lag combinations could be used besides the one where corporate income trails government expenditures by a half year. Moreover, it is entirely possible that the political limits on nonmilitary spending are much greater than for military spending. If a shift from the military budget to nonmilitary needs interferes with private enterprise, then the military option might be encouraged. Finally, elitists can argue that military spending provides an umbrella for foreign investments. Such expenditures are therefore necessary, the argument would run, even if a greater immediate return is possible from a budgetary shift to nonmilitary spending.

Input-Output Analysis

An additional method for determining both the indirect and direct consequences of military spending for various sectors of the economy is provided by input-output economics. For each specific industry, this quantitative tool in economics considers the role of every supplier and every market, yielding an interindustry matrix of economic supply and demand. Dealing with the production of automobiles, for example, this method indicates the amount of rubber, steel, glass, copper, aluminum, etc., required and then, in turn, the supplies needed by the producers of these products, say sulfur for rubber, and so on.

Leontief and his associates (1966, pp. 184–222) investigated the role of military expenditures through this perspective. A 20 percent cut in armament expenditures accompanied by a compensating increase in nonmilitary expenditures would mean a reduction in total output and employment in only ten of the nation's fifty-six industrial sectors (Leontief et al. 1966, pp. 194–97). Among the ten industries with declines, five

would suffer percentage losses exceeding the percentage gain enjoyed by any single one of the remaining industries. These five industries are: aircraft (−16 percent), ordinance (−15 percent), research and development (−13 percent), electronics equipment (−5 percent), and nonferrous metals (−2.2 percent). The sector with the greatest increase, agricultural services, stands to gain only 2.1 percent.

These results, although basically an exercise in economics, have profound sociological implications for the pluralism-elitism controversy. They mean that the economic consequences of a substantial step toward disarmament are lopsided; most industries would gain, but the percentage of business lost in each of five industries (particularly the first three named above) would be far greater than the percentage gained in any single sector. Although the economy as a whole is not harmed by such military cutbacks, the small number of industries with a substantial vested interest in military spending would suffer far more than other industries would gain. This means that the industries benefiting from military expenditures are more narrowly concentrated than are the economic interests that stand to gain through disarmament. The implications of these conclusions are considered in greater detail later.

An even more elaborate application of input-output analysis by Kokat (1967, pp. 805–19), based on the assumption of a 50 percent cut in the defense budget, also leads to the conclusion that a shift to nondefense expenditures would have an expansionary impact on the majority of industries. If there are compensating increases within either the private or public sectors, only a very limited number of industries would suffer from such a severe cutback in military expenditures.

Although input-output analysis fails to support the hypothesis that military spending is a prerequisite to corporate prosperity, an alternative interpretation is possible that is consistent with elitist theory. Despite the results reported above, an elitist might argue, shift to peacetime consumption would be resisted if the transitional costs were very high in comparison with the gains that might ensue. Retooling, new marketing procedures, investment in specialized plants and equipment, greater competition, and other costs might well outweigh the small benefits in sales and employment that most sectors of industry would enjoy through a shift from military to nonmilitary expenditures. Moreover, an abrupt cutback in military spending would have serious social and economic consequences in a number of communities. Large cities such as Fort Worth and Seattle, as well as some industries, would be particularly affected by drastic changes in military policies (Halverson 1969; Ames 1969).

HISTORICAL TRENDS

Rather than restrict the issue to elitism versus pluralism, at this point one could argue that neither theory provides an adequate interpretation of the available data. Although reinterpretation consistent with the elitist perspective is possible, the data above suggest that a high level of military spending is not vital to the prosperity of either the nation or its largest businesses. On the other hand, given the findings of Russett (1969*a*, 1969*b*) that a wide variety of consumer and other public civilian activities suffer when there are substantial military expenditures, the pluralist perspective is not entirely satisfactory. For, if more interest groups would benefit from alternative government-spending policies, then how can pluralist theory explain the maintenance of such a substantial military commitment?

Since it is almost inevitable that any valid macrosocietal theory have implications for social change, a historical perspective provides additional clues to the theoretical issues at hand. The historical trends for both government spending, generally, and military spending, in particular, fail to fit neatly into either the pluralistic or the elitist interpretations.

The percentage of federal expenditures devoted to the armed forces has fluctuated considerably during the nation's history, ranging from about 10 percent during the Great Depression to over 90 percent during the Civil War (fig. 1). There is no evidence that military spending currently occupies an unusually large proportion of the total federal budget; rates during the 1960s are no higher than those in the 1830s and 1840s. The United States, compared with other nations, spends a relatively large part of its gross national product (GNP) on the military (see Benoit and Boulding 1963, pp. 301–6), but the current percentage is by no means uniquely high when compared with the nation's past record. In this regard, there is no support for the thesis that the role of the military in the government has expanded in recent decades (Mills 1959).

On the other hand, there is some evidence that military spending after the Second World War failed to drop as sharply as it had after previous wars. The War of 1812, the Mexican War, the Civil War, and World War I were followed by periods of very low levels of military spending—even when compared with the period preceding the war. By contrast, military expenditures after World War II never declined to the levels found in the 1930s. This feature is compatible with the elitist perspective which emphasizes the change in military-industrial relations that occurred in recent decades.

Although the proportion of government expenditures devoted to the military shows no clear-cut temporal trend, a historical analysis does reveal that the role of government in the national economy has con-

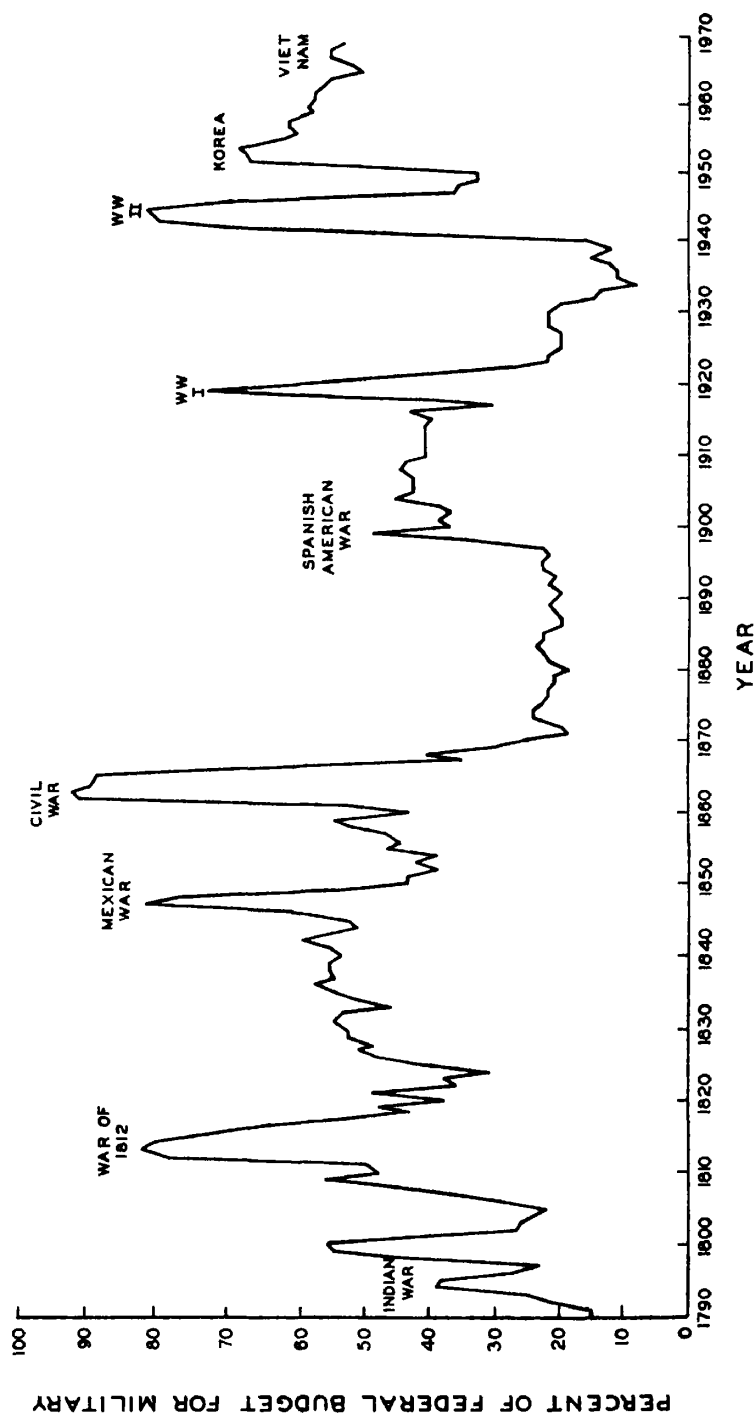



FIG. 1.—Percentage of the federal budget for the military, 1790–1969. Sources: U.S. Bureau of the Census (1960, columns Y350 and Y358; 1965*a*, columns Y350 and Y358*a*; 1965*b*, table 534; 1968, tables 538 and 544), based on expenditures for the "armed services" before 1900 and for "major national security" or "national defense" after 1900. There are some minor inconsistencies among sources.

sistently increased through the years. From the postbellum period until the First World War, government expenditures ranged between 2 and 3 percent of the GNP (fig. 2). After a sharp increase during World War I, the percentage remained above earlier peacetime levels. The federal budget increased to 10 percent of the GNP during the 1930s and reached even higher levels after the emergencies created by World War II had ended. Current government expenditures are about 15 percent of the GNP.

Figures 1 and 2 suggest that changes in the role of the military in the national economy are to be seen largely as a consequence of changes in the role of government in the economy. Consumption of an increasing portion of the total national output by the federal government means that both its nonmilitary and military expenditures are of growing significance to the total economy. Therefore, although the elitists are correct in arguing that military spending amounts to an expanding part of national productivity, the fact remains that the federal government's impact on many other sectors of the society is also growing. In the case of research, for example, the government plays an exceedingly important role (Barber 1968, p. 225). Likewise, there is some evidence of an "education-industrial complex" that operates with considerable effectiveness in influencing federal expenditures for education (Miller 1970). The government's ability to command an increasing portion of national productivity through taxes and other revenues means that a focus solely on the changing military-industrial relations could lead to a very misleading conclusion.

In short, since this brief review of historical trends fails to consistently support either the elitist or the pluralist approaches, it appears all the more reasonable to consider another perspective. Suggested below is an alternative interpretation of military-industrial relations based on what might be called the mechanism of compensating strategy.

AN ALTERNATE PERSPECTIVE

A high level of military expenditures is not necessarily due to a broad set of intense vested interests in such a policy. To be sure, there are both industries and entire communities that are deeply dependent on military expenditures. Moreover, once a pattern of military consumption is established, a shift to nonmilitary spending would be costly for some industries and regions that were not initially dependent on military spending. Nevertheless, when compared with the consequences of alternate government policies, most sectors of American industry gain very little from a high level of military expenditures.

On the other hand, the absence of widely shared direct benefits from military spending need not be taken as evidence that a small segment of

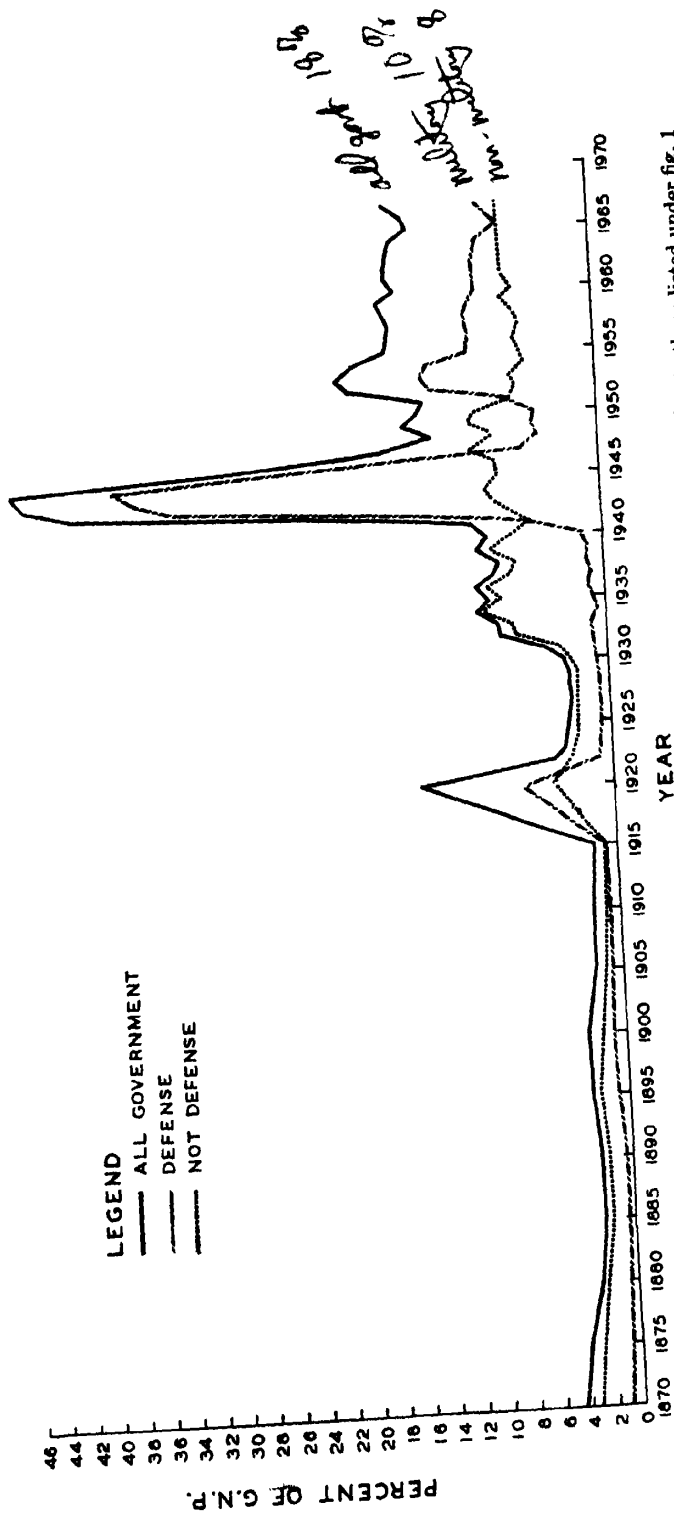



FIG. 2.—Expenditures of the federal government as a percentage of the GNP, 1869–1967. Sources: In addition to those listed under fig. 1 U.S. Bureau of the Census (1960; 1965*a*, column F1; 1968, table 454).

American industry is dominant. Given the different economic and organizational resources that various segments possess, obviously interest groups in the society do not have equal power. Compare, for example, the resources available to the urban poor with those available to the petroleum industry. Nevertheless, policies detrimental to the numerical majority will occur even if a smaller group does not dominate the entire political system. Rather, a process of decision making may be postulated in which the political system's output can fail to reflect the interests of the majority without this necessarily meaning that a power elite controls the government. Even if interest groups were alike in organization, wealth, and other competitive resources, under certain conditions a "compensating" strategy could be pursued such that political decisions would not invariably reflect the direct interests of the majority.

In order to specify the conditions necessary for a compensating power system to operate, two additional characteristics of interest groups should be noted. First, populations within advanced industrial societies are atomized into a highly diverse set of groups, with interests that are neither fully harmonious with one another nor fully competitive. Not only does an expanding division of labor subdivide a nation into increasingly specialized needs and vested interests, as Durkheim noted, but there is also an increased territorial division of labor such that spatial subunits of a nation also develop distinctive concerns. A second key element involves recognition of the fact that interest groups differ more than in terms of whether they are for or against a specific proposal. Rather they also differ in the *degree* of importance that each issue holds. What this means is that groups vary widely in how far they are prepared to go to achieve a specific end.

Accordingly, an advanced industrial society, regardless of its political ideology, must be viewed as one in which a wide variety of interest groups are each attempting to balance an array of potential gains and losses in order to generate the maximum net gain. Advantages that might accrue from opposing another segment are not necessarily pursued if even larger gains are possible through the expenditure of an equivalent amount of political capital in some other government domain. In other words, if interest groups are not by themselves able to obtain the political outcomes they desire, then it is necessary for them to form alliances and coalitions with other interest groups. Such combinations mean that each interest group sacrifices some issues in order to obtain the greatest net rewards. As a consequence, a political body's decision with respect to a particular issue may reflect the intense concern of a minority of interests coupled with the support obtained from other segments whose major interests are found elsewhere.

Four conditions are necessary for a "compensating" power situation to

operate. First, power must be an exhaustible commodity such that each interest group has limited political influence. Second, the interests of the population must be diverse enough so that a given proposal will not have an equal impact on all segments. Third, governmental actions that favor a particular interest group must not eliminate the disadvantaged majority's potential for other gains. In the case at hand, it means that funds are available for more than the military budget or that nonbudgetary legislation can be passed that will yield sufficient gains for other segments of the population. Fourth, legislation beneficial to a specific interest must not at the same time create too great a loss for the majority of other interests. Otherwise, a concerted effort to combat the legislation will provide a net gain to the majority that is even greater than would occur under their use of a compensating strategy.

When these conditions are met, it follows that a given group will not attempt to exert its influence on all issues to the same degree, but rather will concentrate on those that generate the greatest net gain. To obtain passage of particularly beneficial legislation, an interest group may in turn support other proposals that, by themselves, create small losses (see Coleman 1964). The third and fourth conditions are suggested by the controversy over military spending during the Vietnam war. The "guns and butter" policy first meant that other sectors of the population could pursue compensating strategies, such as are required by the third condition. On the other hand, the monetary and domestic crises generated by this series of compensating gains, coupled with the unpopularity of the war, make it increasingly hard to meet the last condition. That is, the potential net gains that would be achieved by the vast majority of the population through a decline in military spending begins to approach or exceed the gains that many segments obtain through a compensating strategy.

According to the notion of compensating strategies, military spending can be explained by a high level of interest on the part of one segment of American business accompanied by a relative lack of concern on the part of other segments of industry. The majority of industries disregard the small losses they incur from defense spending and turn their attention to other aspects of government policy that affect them more directly. Defense spending will influence the profits of dairy farmers, for example, but so too will other government policies such as price supports, marketing restrictions, exports and imports on dairy products, grading practices, trucking costs, and so forth. Accordingly, the area of government action with the most substantial direct impact on the goals of the dairy industry is probably not the military.

Indeed, barring a major war emergency, there are other facets of federal activity that are far more crucial to the interests of many industrial

segments. The relevance of the federal government is hardly restricted to the military budget; decisions affecting taxes, antitrust laws, foreign markets, imports, minimum-wage laws, and a wide variety of other government regulations are extremely important to business. These facets of government policy often have far greater short-term consequences for a specific industry than do military expenditures. The tobacco companies, for example, stand to lose far more from restrictions on cigarette advertising than they are likely to gain in the event of disarmament.[7] The petroleum industry would also enjoy a small gain if there was a compensated cutback in military expenditures; however, federal budgetary decisions with regard to their special depletion tax advantages are far more significant. The largest gain would be enjoyed by agricultural services, but obviously agriculture is influenced by many other areas of government legislation and control.

Senate Committees

This propensity for each segment of the society to pursue its areas of greatest direct interest is illustrated by the states represented on various congressional committees. Although residents of all states are in some manner affected by the policies of any committee, it is clear that political efforts emphasize those areas with the greatest potential returns. Hence, each state tends to be represented on committees affecting those facets of the legislative process that are of greatest importance to the state. The House Agriculture Subcommittee on Tobacco, for example, is loaded with legislators from tobacco-producing states; six of the seven members come from Virginia, North Carolina, South Carolina, and Kentucky.

Table 5 illustrates the association between special interests and membership among several Senate committees. A crude index of vested interest is developed for each committee. States ranking above the national average on this indicator are classified as states with a special *primary* interest in the committee's work; states below the national average are classified as having a *secondary* interest. The index of vested interest for the Senate Agriculture and Forestry Committee, for example, is the percentage of the 1960 labor force in agricultural and related industries. There are thirty states with a higher percentage than the national figure of 6.7 and twenty states with a lower percentage. These thirty states supply all thirteen members of the Senate's Agriculture Committee.

Although the residents of all states are affected by the prices for food and other agricultural products, the Agriculture Committee is almost entirely in the hands of southern and midwest senators from states with a particularly high vested interest in this domain. Such a pattern is con-

[7] A gain of 1.76 percent under the conditions described by Leontief et al. (1966).

sistent with the proposition that an unequal distribution of potential gains and losses will generate different political thrusts for various interest groups.

Other committees also consist of senators from states with the greatest stake in their activities. The Indian Affairs Subcommittee consists entirely of senators from states with a high proportion of Indians. The Minerals and Fuels Committee is loaded with senators from states with relatively large segments of the labor force engaged in these extractive industries. Merchant Marine draws senators from coastal states. States with large metropolitan populations are overrepresented on the Housing

TABLE 5

VESTED INTERESTS OF STATES AND THE MEMBERSHIP OF SENATE COMMITTEES, 91ST CONGRESS, 1969–1970

	All States		States on the Committee	
Committee	Primary Interest*	Secondary Interest	Primary Interest*	Secondary Interest
Agriculture and Forestry	30	20	13	0
Indian Affairs	17	33	10	0
Minerals, Materials, and Fuels	20	30	8	1
Merchant Marine	30	20	9	1
Housing and Urban Affairs	20	30	7	8
Labor	15	33	7	5
Armed Services	25	23	14	3
International Organization and Disarmament	23	25	5	2

NOTE.—Committee membership based on *Congressional Index* (no date).

* Primary interests of the states in various committees based on the following criteria: *Agriculture and Minerals*—states whose labor force in 1960 exceeds the United States percentage in the agriculture and mining industries, respectively; *Indian Affairs*—states in which the Indian percentage of the population exceeds that for the total United States; *Merchant Marine*—states contiguous to an ocean, the Gulf, or the Great Lakes; *Housing and Urban Affairs*—states exceeding the national percentage of residents who reside in standard metropolitan statistical areas; *Labor*—states exceeding the national percentage of population in the AFL-CIO (data available for forty-eight states); *Armed Services*—states that would suffer a net loss in output and employment after compensated cut in armament expenditures (Leontief et al. 1966, p. 197) (data available for forty-eight states). *International Organization*—same as above, except states gaining in output and employment (data available for forty-eight states)

and Urban Affairs Subcommittee, just as the Labor Subcommittee draws senators from states relatively high in union membership.

In this context, the composition of the Senate Armed Services Committee is not entirely surprising. The committee is loaded with senators from the states that would suffer a net loss if there was a compensated 20 percent cut in armament expenditures (based on the input-output analysis reported by Leontief et al. 1966, table 10-2). Only three of the seventeen members of this committee are from the twenty-three states that would enjoy a net gain. On the other hand, the small Subcommittee on International Organization and Disarmament Affairs is dispropor-

tionately composed of senators from states that stand to gain through a military cutback.

Obviously other forces influence committee assignments in the Senate. Some committees are attractive simply because they may catapult members into the national limelight, for example, Foreign Affairs. Budgetary and procedural committees are extremely powerful, covering a wide range of activities, although it is difficult to link them with specific vested interests. In addition, some assignments are influenced by tradition and seniority. Moreover, this brief examination does not cover the complex exchange and trade networks that may exist between different congressional blocs.

Nevertheless, the results reported above do serve to illustrate the selective pursuit of vested interests. The fact that all activities of the Congress are of consequence in some direct or indirect way to every resident and every organization does not prevent each segment of the society from emphasizing those areas where maximum net gains may be obtained. In this regard, the composition of the Senate's Armed Services Committee may be viewed as but another manifestation of this organizational principle.

DISCUSSION

No single empirical study can determine the nature of military-industrial relations, to say nothing of resolving the elitist-pluralist controversy in which it is enmeshed. However, the data are suggestive both about the empirical question and the theoretical restatement that may be necessary.

In terms of the empirical facets of the study, several elements of the elitist position are supported. Some major corporations are deeply dependent on armament contracts; and the decline after World War II in the proportion of government spending on the military is less than would be expected from the patterns after earlier wars. Moreover, the federal government is a growing factor in the national economy, and hence its expenditures for the military are of increasing importance to the business world. There is no reason to doubt the existence of a military-industrial complex *if* by that phrase is meant an intense dependency on military contracts among some very large corporations.

On the other hand, there is no evidence to support the contention that the general success of large businesses in the nation depends on substantial expenditures for the military. Indeed, there is evidence to indicate that most would benefit from alternative government spending or from equivalent expenditures in the private sectors of the economy. For the majority of the largest corporations, military contracts at most amount

to a very small portion of their total business. Moreover, both the regression and input-output analyses suggest that corporate prosperity would be increased in the absence of military spending.

To be sure, a substantial and sudden drop in military expenditures would create difficulties for a few sectors of the economy and certain cities and regions that are deeply dependent on the military. Nevertheless, the consequences of disarmament should not be interpreted as the cause of its initial buildup. Cities do not first grow and then develop military industries that support them, rather the growth of cities may reflect the expansion of their economic base. Moreover, the bulk of American industry would gain under alternative spending policies.

If these inferences about military-industrial relations are valid, then both of the major current theories provide inadequate perspectives on the nature of societal power. Crucial to the reconceptualization suggested earlier is recognition of the fact that each of the diverse interest groups may, under some circumstances, take stands that are counter to their interests. This will occur when four necessary conditions are met such that a "compensating" strategy is possible. If each group attempts to generate the greatest *net* gain for itself, then a given policy need not be the product of simply the majority of interests, nor need it mean that a small set of interests is dominant. Rather, the policy may mean that the losses to a majority of interests are small, whereas the gains to some sectors are substantial.

From this perspective, military spending is but one among many sets of vested interests. To be sure, this domain could reach the point where it dominates the entire economic and social life of the nation. However, the results suggest that military expenditures are not, currently, a vital and necessary prerequisite to general corporate prosperity. Using the hypothesis of compensating strategies, the high level of military expenditures need not be interpreted as the product of a common vested interest in such spending among major businesses. Rather, extensive military spending may be viewed as reflecting the operations of an important and powerful interest group in a setting where other legislative issues have an even greater direct bearing on the prosperity of the remainder of economic segments. In the same fashion, senators tend to concentrate on areas of greatest direct benefit to their states despite the fact that all legislation is in some way relevant to all states.

Admittedly, this position must be treated as an alternative hypothesis since the results reported earlier may be reinterpreted so as to be consistent with either the pluralist or elitist schools. For example, the latter may claim that large businesses will support military expenditures, even when not directly beneficial, in order to provide a military umbrella for overseas investment. The hypothesis developed here of a "compensat-

ing" strategy and its application must be viewed as an initial effort to take into account some of the difficulties that are faced by an unyielding advocacy of either the pluralist or elitist perspectives.

Unless one is prepared to evaluate existing theories in terms of the results obtained from studies of the empirical reality, a basic issue such as the structure of power in the nation will forever remain beyond the purview of sociology. Rather, we shall continue to be sociologists who subject the topic only to polemics, speculation, anecdotal arguments, and the use of models that would be rejected as "stereotypes" if analogous reasoning were applied to other facets of the social world in which we live.

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Class and Marriage in Africa and Eurasia[1]

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The concepts of class, caste, and estate, derived as they are from Eurasian models, are not wholly satisfactory when applied to Africa. Homogamy and in-marriage are not characteristic of the social strata in African states, which tend to encourage marriage between groups of different status, hence these groups tend not to develop in isolation with distinctive modes of life. Out-marriage and bridewealth in Africa stand in contrast to in-marriage and dowry in Eurasia. It is suggested that the more intensive form of agriculture in the latter area encouraged the preservation of familial status by the transmission, *inter alia*, of property to females (e.g., the dowry) as well as males, a procedure which strongly encourages the marriage of like with like. In Africa, out-marriage strengthens the social ties and cultural similarities within a society. As a consequence, "class conflict" was less significant in the political system, although the situation is now changing in the "modern" sector.

In this paper I try to answer a question about West Africa raised a hundred years ago by Richard Burton in the description of his *Mission to Gelele*, king of the state of Dahomey. "Truely it is said that whilst the poor man in the North is the son of a pauper, the poor man in the Tropics is the son of a prince" (1864, pp. 40–41). It is a problem that was taken up fifty years later in another form by the Gold Coast lawyer from Cape Coast, John Mensah Sarbah, when he wrote that "in the African social system the formation of a pauper class is unknown, nor is there antagonism of class against class" (Redwar 1909, p. vi). And it is a problem that has been central to current controversies between Marxist-Leninists, on the one hand, and African socialists, on the other, about the nature of the systems of stratification in that continent (Grundy 1964).

Each of these statements involves some contrast, implicit or explicit, between the class structure of African and Eurasian states, especially if one understands the north (in Burton's characteristic aphorism) to mean Eurasia and the south, Africa. It is the implications for the comparative analysis of stratification, or more specifically for status groups, that I want to pursue by considering the relationship between class and marriage.

[1] This paper was first read to the Department of Sociology, University of Chicago, in May 1969. I am grateful to the members of that department both for their invitation and for their comments. The theme is one that has been touched upon by other writers on Africa and Eurasia, too numerous to mention. I am particularly indebted to L. A. Fallers, M. Gluckman, W. J. Goode, E. R. Leach, E. Peters, and N. O. Yalman for conversations and clarifications.

CLASS

In all the major continents of the world, the more technologically advanced societies are marked by their unequal distribution of power and status. It is this power bank, Parsons suggests, that, among other things, provides the mechanism for the mobilization of resources in the interest of the collective action needed for the running of complex societies (Parsons 1964, p. 51). The terms we use to analyze the major groups in this wide range of stratified systems, in whatever part of the world they are found, derive directly from the Eurasian experience. Three main concepts are employed: class, as typified by the modern Western world; caste, characteristic of India; and the estate (or *stände*) of feudal Europe. In sociological discussions the major difference between class and caste turns upon the openness or closure of a series of horizontally juxtaposed groups or strata, that is, upon whether or not mobility is allowed between them.[2]

In visual terms, such systems are often diagrammed as a kind of layer cake, one element spread on top of the next like a series of deposits in a well-conducted archaeological dig, the different units being arranged in a single hierarchy in which each group is defined as being above, below, or in between. Or alternatively, to use another culinary metaphor, as a jam sandwich, with most of the jam at the top.

I am concerned with these models, verbal and visual, because they may lead us to neglect certain basic differences between such groups as they are found in the major societies of Eurasia (which are in some ways closer together than the categorization allows) and in the state systems of Africa (which in certain respects stand opposed both to class and caste). This is not simply a matter of setting right the historical record. A good deal more is at stake. From the standpoint of social theory, the adoption of a particular model affects the categories and measures of sociological inquiry. From the standpoint of social practice, it affects (or could affect) social policy in developing and developed nations alike. At the very least, it influences one's understanding of the role of the new elites.[3]

First of all, analytic categories of this degree of abstraction are of limited use for many, possibly most, scientific purposes. The very fact that they are drained of content, of "culture," to such an extent has obscured the important differences. For example, the term "feudal" has frequently been applied both to medieval Europe and to precolonial

[2] Other writers have stressed the cultural factors which they suggest make caste specific to Hindu India (e.g., Leach 1960).

[3] See, e.g., Folson's comment on the statement Bing made on p. 62 of his autobiographical account of the Nkrumah regime: "It is equally nonsensical to include members of the National Liberation Council among the aristocratic class, whatever that means in the Ghanaian context" (Folson 1969, p. 37).

Africa, giving insufficient attention to differences in the economy as well as other spheres.[4]

But, in respect to status groups, there are more specific reasons why these general concepts have given rise to misunderstanding. Clearly, precolonial African states had no caste system (though some had castes); neither did they have classes in the modern European sense, if mobility is a central feature.[5] How is their type of status group best described? In his excellent account of the Nupe of Nigeria, Nadel concludes that this state is above all a class system (1942, pp. 127–35). However, his study, which is significantly entitled *A Black Byzantium*, is replete with feudal comparisons, implicit as well as explicit. This would suggest that the model of *stände* might be more appropriate. Many other authors have pursued this feudal analogy. But, here too, there is the built-in assumption that these units were of a type found in Europe at an earlier date. I want to suggest that even if we are forced to use such terms because of the poverty of our analytic vocabulary and a natural reluctance to proliferate neologisms, we should bear in mind the basic differences between status groups in the two continental areas and beware of general statements based (often unconsciously) upon Eurasian experience alone.

Let us examine a particular case where this difference has been overlooked. In most discussions, classes, castes, and estates are seen as having certain basic features in common. One widespread idea is that the social distance between classes is maintained by various blocks in the system of intergroup communication, that is, by restrictions upon marrying out, upon eating together, and upon other forms of social intercourse. While these restrictions do not always have the obligatory character that is found in caste systems, and while formal freedom often exists, they are still effective in maintaining and building barriers between the status groups in a particular society.

Clearly the most effective such barrier is that on intermarriage, since such a tie would bring the two groups into close conjugal, affinal, and other social relationships. It is therefore upon the marital arrangements between the different strata that I want to concentrate first.

MARRIAGE

In sociological writings, there is a widely held belief that all status groups discourage intermarriage. This idea exists even among those writers who display an intelligent appreciation of cross-cultural analysis. In his work on social stratification, Bernard Barber claims that "all societies tend to disapprove not only of all marriage between people from different

[4] For a discussion, see J. Goody (1963, 1969*a*).

[5] See the discussion by Pauvert 1955.

social classes but also of all social relations between them that could lead to marriage" (1957, p. 123). Even in a relatively open-class society like the United States, social class endogamy is the rule. According to Hollingshead, 83 percent of all New Haven marriages were between people who had been living in neighborhoods of the same or adjacent social class position (1950, p. 625).[6]

Some years earlier, Kingsley Davis presented a theoretical paper discussing why this should be. He maintained that "a cardinal principle of every stratified social order is that the majority of those marrying shall marry equals"; endogamy, or at least preferential in-marriage, is the rule of class, caste, or *stände*. The reason, he claims, is that marriage implies equality. "If some persons are 'untouchable,' they must also be unmarriageable, and if food which they cook is 'uneatable,' they must also be 'unusable' in the kitchen." He goes on to say that "a wife reared in a social stratum widely different from her husband's is apt to inculcate ideas and behaviour incompatible with the position the children will inherit from their father, thus creating a hiatus between their status and their role" (1941, pp. 337–38). In other words, intermarriage would make it impossible to maintain extensive differences in behavior between individuals and groups, since it would lead to a merging of the subcultures that distinguish them.

In another contribution to the subject published in the same year, Robert Merton stresses the same point, though in a somewhat wider social context. "Intermarriage between persons of radically different social status thus conflicts with the existing organization of cliques and friendship groups involving the spouses and their kin. Rules of avoidance or social distance and rules of accessibility are brought into open conflict" (1964, p. 142). Merton's discussion deals mainly with ethnic caste, since he is trying to account for the predominance, among black-white marriages in the United States, of unions between male blacks and female whites. But the wider concern is with the close relationship between marriage policy and stratification.

As far as this situation goes, the general argument is a sound one. But it is not in fact the case that all stratified systems demand a high degree of in-marriage. Status endogamy and related forms of in-marriage are certainly characteristic of the major Eurasian societies. In Africa, on the other hand, endogamy is rarely found except in ethnic situations, in particular those where ruling groups of northern origin have established themselves over black agriculturalists, as happened in South Africa, Ethiopia, the East African coast, certain Interlacustrine states, and on

[6] On homogamy in contemporary France, see Girard (1964) who writes, "L'homogamie apparaîtrait en quelque sorte comme une corollaire de la conscience de groupe" (p. 31). This monograph also includes a useful bibliography on the subject.

the Saharan fringes (e.g., in Timbuktu). In the major states of West Africa, ruling groups were rarely if ever endogamous. Indeed, where the ruling dynasty consisted of an exogamous clan or lineage (i.e., where there is a "corporate" claim to chiefship), both male and female members were obliged to take their spouses from outside the ruling estate; conubium was not merely formally open, as in a class system, but obligatorily so. However, even where the ruling estate does not consist of a single exogamous clan, intermarriage is widespread. Take the kingdom of Gonja in northern Ghana.[7] Originally a conquest state established by Mande horsemen in the seventeenth century, it comprises four major sociopolitical categories, the ruling Gbanya (who claim agnatic descent from the leader of the conquest), the Muslims (who mainly descend from those attached to the ruling house), the commoners (largely the descendants of conquered autochthones and specialist service groups), and finally the slaves (who were constantly absorbed into the commoner estate and who were continually recruited by raiding and purchase). In addition there was a sizable body of strangers whose activities centered upon the great trading town of Salaga, where forest products were exchanged for northern livestock, minerals, and manufactures. Examination of spouses' estates in 515 Gonja marriages[8] shows that men of all groups take a large proportion of wives from estates other than their own. This is very pronounced among Muslim men (two-thirds of whose marriages are outside the estate) and for men of the ruling group (four-fifths of whose marriages are outside). Even one-quarter of the men from the numerically dominant commoner estate married women from other estates. Much the same picture emerges from a study of the marriages of the previous generation, indicating that the situation we find in this hierarchical society is not a new one. Indeed, things were probably like this from the beginning. It was presumably because of intermarriage that, as so often occurs in Africa, the ruling estate lost its original language and adopted the speech of one of the groups it had conquered. It remains true today that, while marriages of alliance are sometimes made between friends in the ruling group, many royals express a preference for the daughters of commoners, who are said to be less work shy and more faithful than their own sisters. In the nearby kingdom of Bariba, in north Dahomey, similar preferences for "low" marriage were openly expressed by male members of the ruling group,[9] and it was said that the princesses of the matrilineal Ashanti, through whom royal blood and claims to office were transmitted, preferred the lighter-skinned males

[7] For further information on this kingdom, see E. N. Goody (1962, 1969) and J. Goody (1967, 1968, 1969c).

[8] A study of these marriages is being prepared by Dr. Esther Goody.

[9] According to Lombard (see Cornevin 1962, pp. 163–64).

from the north, men who could only have been strangers or slaves. Indeed, so little objection was there to "low" marriage in the area that a Gonja prince once remarked to me that "all our mothers were slaves."

These systems of effectively open conubium, which are widespread in Africa, stand out in sharp opposition to the marriage arrangements of the major states in Eurasia, whether they are stratified by caste or by class. In these societies, like tends to marry like, or better. Fathers try to arrange the marriage of their daughters to men of equal or superior standing (i.e., hypergamy), but as a marriage policy, hypogamy is firmly discouraged and rarely promoted.[10] The result, as Tylor pointed out, is the isolation of groups.[11]

In Africa, the opposite is true. The different status groups are bound together by a network of intermarriages which has the profound implications for the social system that Tylor, Davis, and others suggested. In order to indicate the effects on culture, and upon social integration, I take the apparently trivial example of cooking, since its association with sex and marriage is close.

COOKING

Given the practice of heterogamy (or open conubium), it is clearly difficult to maintain or institutionalize class differences, that is, internal differences of culture distinct from those based upon expenditure alone. When husbands and wives come from different groups, the women can hardly be expected to raise children in the ways of their affines rather than their own—unless their role is largely replaced by domestic servants of one kind or another. If societies are polygynous as well as heterogamous, the situation becomes yet more complex. The women living in a common household will be of different origins and their ways of acting are likely to move toward a common mean. Indeed, there is some evidence for the emergence of new norms out of this kind of mutual accommodation in the multitribal dwelling groups of lower-status migrants in West African cities, and this process is certainly reflected in their tendency to adopt a standardized repertoire of recipes.[12] Under circumstances such as these—the large heterogeneous dwelling, where a favorable climate allows women and children to work mainly in the open

[10] Though, as Merton has pointed out, in black-white marriages in the United States caste hypogamy may be crosscut by class hypergamy, as when upper black male marries lower white female.

[11] Hiller (1933, p. 24) uses *isolation device* to denote arrangements and symbols which mark off in-groups from out-groups. Merton distinguishes between the *isolation devices* employed by subordinate groups and the *exclusion devices* employed by dominant groups.

[12] These observations were made by Dr. Enid Schildkrout in the course of her intensive investigation of urban processes in Kumasi.

common space of the courtyard rather than be confined to the closed private space of the room—the pressures are likely to be toward cultural homogeneity and political identification.

Contrast the Eurasian situation: The difference between the centralized societies of Africa and Eurasia are highlighted in the household economy. While Eurasia had a *haute cuisine* as well as a lower, *basse cuisine*, Africa had neither; its cooking was demotic. Or rather, what cultural differentiation existed did so in those societies like Ruanda, where the strata were in-marrying and did not mix at the domestic level. Otherwise it was largely a matter of quantitative rather than qualitative differences.

There is, of course, a danger in drawing too stark a contrast. One of the great drawbacks of contemporary structural analysis is its devotion to crude oppositions rather than more subtle measurements. Clearly, in the mercantile and warrior states of West Africa, ways of acting depended upon one's social status. Burton wrote of the king in Dahomey that he would not allow the peasants to cultivate certain cash crops around the port of Whydah; a chief could not alter his house without the king's permission; and so on (1864, pp. i, 180–81). But such distinctions did not lie in the traditional patterns of culture; they tended to be attached to specific roles rather than to general classes and to derive from the authority of the king rather than from internal differentiation. Moreover, intermarriage prevented too great a separation, too complete an isolation, to develop between the strata. There was broad homogeneity in marriage, cooking, and other aspects of culture, even though the strata had differential access to political office.

IMPLICATIONS AND EXPLANATION

I have suggested that the usual way of looking at status groups in hierarchical societies takes account of too few important variables. As distinct from Eurasian societies, most African states do not discourage marriage between status groups. On the contrary, they encourage such arrangements. The consequences are clear: Groups tend to merge culturally even though they are politically distinct, and this is a fact of considerable political significance.

But why do Eurasian societies tend to isolate their classes and African societies to integrate theirs? What are the preconditions and the implications of these differences?[13]

In offering an explanation I am dealing with a trend, though one that has statistical support at a number of points (J. Goody 1969*b*). I am not claiming to explain all the phenomena in question, only a significant

[13] A less impressionistic method of approach to this problem is tried out in Goody, Irvine, and Tahany (forthcoming).

part of them; where numerical material is available, the extent of that part is shown by the coefficient of association. And by drawing attention to the role of certain economic variables in Eurasian societies, I do not intend to reduce class and caste to epiphenomena of the economy. Religious and other aspects of such hierarchies exist in their own right.[14] But I am pointing to what I consider to be the necessary preconditions for the development of certain major aspects of these institutions and to the social implications of this fact.[15]

It is important to remember that the in-marrying tendency of European and Asian societies was not simply a feature of the major social categories known as castes or classes. Bloch insists that the marriages of like to like (or to above) occurred at all levels and for all roles. A serf was not allowed to marry outside the group of serfs dependent on the same lord (1966, p. 88). Duby quotes a medieval source as stating. "Les hommes de la terre de Saint-Pierre ne prendront pas des femmes étrangères, tant qu'ils pourront trouver dans la cour des femmes qu'ils puissent épouser. Qu'il en soit de même pour les femmes" (1962, p. 451) The "small world of seigneurial sergeants," writes Bloch, developed a "class solidarity" by inheritance and by in-marriage. In the twelfth and thirteenth centuries, "the sons and daughters of bailiffs preferred to choose their marriage partners from among their opposite numbers on other *seigneuries*. When people are concerned to marry 'within their own circle,' there is tangible proof that the 'circle' is on its way to becoming a class" (1966, p. 192). In the towns the same tendency occurred among merchants' daughters, even when they were orphans. A fourteenth-century record from London shows fifty-three out of sixty-three such girls (84 percent) marrying merchants. Of the other ten, five were married to gentlemen and five to citizens of lesser companies. A yet higher proportion of widows remarried in their own sphere (Thrupp 1948, p. 26). As for the great landed families, the position here is well known from the recent work of Holmes (1957) for the medieval period, of Stone (1960–61, 1967) for Tudor and Stuart England, and Habbakuk (1950) for the eighteenth century. Habbakuk describes the attempts of the gentry to secure proper marriages for their daughters: "The marriages between landed families in the eighteenth century were more like treaties of alliance between sovereign states than love matches; they involved hard bargaining in which the size of the bride's fortune was carefully matched against the income which the bridegroom's father

[14] For a recent historical review, see Mousnier 1969.

[15] I.e., development rather than current distribution. Monogamy may have arisen under specific socioeconomic conditions but an explanation of its present distribution cannot disregard the proselytizing activities of Christian missionaries. Such considerations mean that our correlations are bound to be less than perfect.

was prepared to settle on him" (1955, p. 158). Similar kinds of arrangements were made at the marriages of modern Irish peasants (Arensberg and Kimball 1940), Greek villagers (Friedl 1962), and in Indian castes (Kapadia 1966, p. 137). In all these cases, it is not simply a question of the absence of marriage between the groups (though this fact is of great significance in caste systems) but of matching like for like, or getting an even better bargain. And the usual mechanism by which this matching is achieved is the matching of property, often by means of the dowry, whereby a woman acquired her portion upon marriage (or a jointure upon widowhood) rather than at the death of her father or mother. Dowry systems, and indeed the whole process by which property is passed to the offspring of both sexes by what I have called diverging devolution, is characteristic of the centralized societies of Eurasia (J. Goody 1962, pp. 307–20; 1969*b*), those very societies that are also marked by the tendency to marry-in.

The contrast between Eurasia and Africa in terms of openness of marriage (in-marriage and out-marriage) is paralleled by a contrast in marriage transactions (dowry and bridewealth). In Africa there is no dowry, except in areas directly influenced by Mediterranean practice, nor is there any transmission of property between males and females, either at death or at marriage. What then is the connection between Eurasia, dowry, and in-marriage, on the one hand, and Africa, bridewealth, and out-marriage, on the other? If we see in-marriage and dowry as methods of preserving differences of property and status in contrast to bridewealth and out-marriage which diffuse them, why then should these features be associated with Eurasia rather than Africa?

In explaining the difference, I want to begin by recalling Bloch's account of *French Rural History* (1966) where he traces the social developments associated with the use of the plough and the rise of an increasingly intensive agriculture in Europe. In another outstanding study, Homans (1941) also relates differences in social structure to differences in agricultural practice.

It is reasonable to look for such differences in the present case. As distinct from the major societies of Eurasia, African states have simple systems of farming, since the continent lacks the plough, the wheel, and often a good soil. Frequently the exploitation of the land takes the form of shifting agriculture. Where population densities increase land may be more permanently cultivated, as in the Fra-fra region of northern Ghana, but productivity still remains at a low level. In this particular area, Llyn (1942) found the average area farmed per man was 2.49 acres (0.66 per person). While the cereal grown in the small fertilized plot around the compound yielded 2,000 pounds per acre, the yield of unmanured land dropped to one-tenth of this amount. On these yields he

claimed it was difficult for a family to subsist without exchanging their livestock for the grain from less-crowded areas (1942, pp. 78–83). The west of Ghana's Upper Region is less populated than this central part. In that area, three groups cultivated the following average acreages per person: LoWiile 0.9; LoDagaba 1.5; Dagaba 1.8. The rough acreage for an elementary family (i.e., per man) was therefore 3.6; 5; and 6.2 acres, respectively. Internal variation within these groups was small. Of the three, the Dagaba had access to as much bushland as they could farm (J. Goody 1956, p. 30; 1958, p. 64); their acreage probably represents about the limit a man could cultivate by the hoe under these conditions. Consequently farmers could produce relatively little by way of surplus, at least in terms of cereal.[16] While a chief could employ the labor of freemen or slaves to work the land, it would bring him a very small reward when compared with the situation that existed in medieval England and in other parts of Eurasia under plough cultivation. Figures are difficult to come by for medieval Europe, but the details of the Glastonbury Manors are sufficiently precise to make a limited point. Here 260 holdings were half a virgate (30 acres) or more and 350 were of 5 acres or less (Postan 1950, p. 242). In comparing these acreages we must make allowances for differences in the farming system, since in the medieval case fallow land is included in the measurement of the holding. On the other hand, we must remember that the virgate was only a quarter of the acreage a family could, in theory, farm in one year, namely, a hide. What is remarkable if viewed from the African standpoint is not so much the overlap between the larger farms under hoe cultivation and the smaller farms under plough, but the immensely greater *potential* of plough farming and the massive inequalities of holdings in land which it allowed.

The figures I have given are for western Europe, but elsewhere, too, the animal-drawn plow meant a very significant leap forward in productive capacity. Its critical role has been discussed by many writers. Generalists like Childe (1954) and McNeill (1963) have stressed its role in the growth of human civilization; more specifically, Hole and Flannery (1967) have argued for a close relationship between the nature of the productive system and the character of the social organization. Leach (1947, pp. 239 ff.) has examined the difference between Shan and Kachin in terms of the contrast between plough and shifting agriculture. The position in Africa, whether in the savannas or the forest, is somewhat different. But the increase in land a man can bring under cultivation by the use of the plough is apparent in reports from northern Nigeria. Grove noted that in the Dan Yusufu district the average holding of a hoe

[16] The situation is somewhat different with forest crops such as bananas and taro, and with intermediary crops such as yams.

work unit was about 8 acres, whereas a mixed farmer using a plough "requires at least 20 acres of land if he is to make full use of his pair of working cattle" (1957, pp. 40–41). The fact that the amount of good farmland is limited means that only relatively few can adopt this new technique, giving rise to considerable differences in the holding of land. More recently Anthony and Johnston have shown the mean acreage cultivated by plough farmers in this same area was three times as great as that of hoe farmers (1968, p. 47), though the former also had somewhat larger families.

The increase in productivity that the plough allows has two implications for stratification: It enables a ruling group to develop a much greater standard of living out of the agricultural surplus (to which, of course, it makes some contribution by way of investment in machinery and protection from interference), but it also means that the producers themselves are ranked on the basis of their command of the means of production, that is, their differential access to land and equipment. Good land for ploughing is now short; not everyone can have as much as he wants. And here we have the basis for the difference between richer and poorer peasants, indeed even landed and landless peasants, that characterizes Eurasian village life.

Contrast this kulak situation with the very different rural system described by Burton in one of the most centralized, the most highly organized states in Africa, Dahomey: "Not a tenth of the land is cultivated; the fallow system is universal, and when a man wants fresh ground he merely brings a little dash to the caboceer" (1864, p. 40). Under these conditions, the whole system of stratification, national as well as local, must be very different from the kind of regime where the ruling group has effective control of usufructuary as well as alloidal rights. If there is a plentiful supply of land, no man need bend his knee to a lord simply in order to get a living. It is critical to my thesis that in Africa there were no landlord-tenant relationships, nor any institution one can legitimately call "serfdom" or "peonage." Slavery was widespread, though the payoff was limited. Clientship also existed, but the rewards for voluntary subjection were either in cattle (as in Ruanda) or in political rights over land, that is, the right to collect tax. But it was taxes over trade goods rather than rent or tribute from agricultural produce that contributed to the economy of the ruling class (what Marx called "state feudal land ownership"), though income from raiding was often the most important single source of wealth.

Relations between man and man were rarely based on differences in landholding, either on the state or community level. Indeed, at the community level, land tended to be owned corporately by a lineage group, though exploited by much smaller family units: The lineage might hold

fallow land in reserve to be distributed among its members according to need rather than by next-of-kin inheritance (e.g., J. Goody 1956, pp. 34 ff.). While there were differences between rich and poor farmers, these tended to be based upon the strength of one's arm or the number of one's sons, rather than upon the inheritance of landed property. Broadly speaking, poverty was related to labor rather than capital. Indeed many groups conceptualize differences of wealth in terms of strength rather than accumulation. Among the LoDagaa of northern Ghana a poor man is a weak one (*nibaalo*) and a rich man is a strong one (*gandaa, nikpiung*), though the phrase "chief of money" or "cowries" (*libie na*) is also used.

Since the social status and living standard of the family groups that exploited the land were little affected by the transmission of the means of production, there was less pressure either to individualize those rights or to channel them to one's offspring. In the centralized states, what counted was the transmission of rights to hold office, where relationship to a particular group (e.g., the ruling Gbanya in Gonja) was often as important as a relationship to a particular person. As far as marriage was concerned, one's daughters were going to get a roughly similar deal (similar to what they had experienced at home) wherever they married, so that selection of mates by property control was less significant. Because of the absence of the plough and other capital investment in land one man's holding was much like another. An individual did not have to pursue a policy of marrying people of the same socioeconomic class in order to retain differential status because the differences (other than political ones) were not that great. The relative cultural homogeneity we have observed went hand in hand with the relative economic homogeneity.

Contrast the marriage situation in Europe. To maintain the socioeconomic standing of his sons and daughters, a man had to provide them both with part of his property, that is, he had to practice diverging devolution. In the case of a girl, her portion enabled her to acquire a husband who would, in the well-worn phrase, "maintain her in the standard of life to which she was accustomed"; it also enabled her to support herself in her widowhood through the medium of the dower. It is clear that such a system of property distribution, which involves the establishment of some type of conjugal fund, is difficult to operate unless marriage (marriage with property) is monogamous, and it is highly significant that monogamy is firmly associated with this Eurasian mode of transmitting property (J. Goody 1969*b*, p. 63).

I have tried to associate certain kinds of marriage arrangements (namely in-marriage)—which have a fundamental significance for contemporary as well as preindustrial social structure—with specific ways of passing property between the generations (diverging devolution) and,

in turn, to link this with the higher productivity (and scarcer resources) that arise in more advanced systems of agriculture. The contrast is one between Eurasia and Africa, but there is an intermediary area that provides a test of the hypothesis: Ethiopia.

ETHIOPIA

The nature of the marriage transaction and the relationship to land tenure are well illustrated in this country, which is African physically but not socially.

As the Amhara had the plough,[17] land had a considerable economic value. In his account of the area around Dabra Berhan, Workneh shows how the differences in the standard of living are related to the ownership of land. While most farmers are poor and "own only very small pieces of land," there are "great differences in the amounts of land possessed. Some farmers have many pieces of land for farming while others have only two or three *massa*, an area which may not exceed 30,000 square metres," that is, about 7.5 acres (1961, p. 82).

His account suggests how these differences in landholdings are related to marriage. Sex plays "a great part in determining the ownership of land and, in consequence, the standard of living and the type of education people get. . . . [M]ale children get a greater share of the land than female children" (1961, p. 85). In most of Africa a daughter gets no property at all from her father (who controls the productive surplus); here at least she gets a substantial share, even though, according to the author, a woman's descendants are poorer than the descendants of sons. At this point, he seems to disregard a woman's paternal heritage. Her status is maintained if she marries well, for then her daughter will in turn be well provided for by the husband. It is perhaps for this reason that "parents spend more money and care on their daughters than on their sons. During childhood the girls are well dressed while the boys only get enough clothes to protect themselves from the bitter weather." The money a parent spends on a girl clearly affects her ability to attract a husband of the proper socioeconomic standing, although "even after marriage their parents face many difficulties and spend much money in supporting their daughters whenever they quarrel with their husbands."

[17] Other mechanical devices used in Europe were not encouraged. Indeed they were often actively discouraged. In 1844 Harris recorded the fact that two Greeks had built a water mill for the king, but it was not used because of opposition from the priests. A generation later, a French traveler reported that the king's confessor called the mill the work of the demon and ordered it to be burned in order to destroy the spirit responsible. He excommunicated not only the builders but also anyone who had brought grain to it for milling or had eaten bread produced from its flour (Pankhurst 1961*a*, p. 31).

Amhara society is differentiated not only in landholding and in standard of living but also culturally. Rich farmers have different attitudes toward education and religion than the poor, generally being more conservative. But the village community is only one level of Amharic life. Above it is a massive secular and religious hierarchy, which is again highly differentiated in terms of landholding, standard of living, and behavior. "The social hierarchy in traditional Ethiopia," writes Pankhurst, "was very clearly defined and left its mark on many facets of everyday life. It could be seen in class relations, in the use of different forms of speech in addressing or referring to persons of different rank, in different ways of dressing in the presence of superiors, equals and inferiors, in a series of prohibitions designed to exclude the lower orders from certain privileges in one way or another associated with status, and in the existence of so-called depressed classes" (1961*a*, p. 7). These features of the social structure were associated with extreme respect and reticence of the inferior toward the superior and with a large number of sumptuary laws about the wearing of colored dresses and gold jewelry, the use of umbrellas, as well as more specifically economic privileges like the noble's monopoly of brewing honey wine (*tej*) and the prohibition upon anyone killing a cow "without leave from the lord of the country" (Alvarez 1881, pp. 408–9). "In the time of our fathers and grandfathers," the Tigre nobles declared when giving judgment in a case of this kind, "persons found with *tej* in their houses were deprived of their land, persons discovered sleeping on leather beds had their riches taken away from them" (Pankhurst 1961*a;* see also Pankhurst 1961*b;* Levine 1965).

Differences between statuses and restrictions upon the behavior of social groups occurred in other centralized states in Africa, particularly where their economies were based upon the coastal trade or upon military supremacy. My argument is not that such restrictions were absent but that, despite these rules, the African hierarchy, whether of persons or groups, was less highly differentiated in a qualitative sense, even though the number of steps in that hierarchy might be the same as in Eurasia. One reason was the limited amount that upper-status groups were able to remove from the system of agricultural production and the consequent restrictions on the development of economically based subcultures.

CONCLUSION

I have already pointed to some conclusions in the course of my argument. To summarize them again would be to run the danger of further simplifying what is already a highly generalized discussion. But the argument does throw some light on my opening query and to this I return. The accepted typology of hierarchical systems of status groups appears to

be too abstract and too Eurasian to account for the facts at our command, especially those about Africa where the social groupings in a politically differentiated society are not necessarily in-marrying groups, though many sociologists have seen these as a universal feature of stratified systems. A realization of this fact will make general statements less general but more valid. However, I am not simply concerned with social theory in the abstract, nor yet with social history in a more concrete sense, but also with understanding the modern situation (though I would argue that the dichotomy between modern and traditional does not take us very far). The realization that marriage policy is a variable has important implications for the relationship within and between societies; where integration is desired, exogamy or at least "preferential out-marriage" (the mixed marriage, in fact) is clearly the most effective way of achieving that end. But here I am primarily concerned with the implications for African societies. There has been a lot of discussion by politicians as well as sociologists as to the role of classes in the emergent political systems of Africa, much of it dogmatic, ideological, and uninspired. Broadly speaking, African politicians, especially those advocating African socialism, have argued against the existence of a class system in traditional society. For Nkrumah, at least before 1964, Africa was classless; so too for Senghor, Touré, and Nyerere, the last of whom wrote: "I doubt if the equivalent for the word 'class' exists in an indigenous African language; for language describes the ideas of those who speak it, and the idea of 'class' and 'caste' was non-existent in African society" (1962; 1968, p. ii). In making such statements, the writers did not mean that there were no status groups in the earlier period, nor that classes (in the European sense) were not now emerging under present conditions. But while European Marxists and non-Marxists alike were attempting to fit Africa into their own developmental schema, these Africans claimed there was an important difference in the socioeconomic structure, though they were unable to state clearly what this was. Looking at this whole problem, Grundy has suggested that "the denial of social classes is a device utilised by ruling elites to bolster their regimes" (1964, p. 392). As far as the emergent sector goes, this statement undoubtedly holds some truth; our current terminology enables new elites to enjoy high office and high living if their superior position is not stigmatized as "class." But there is more to the question than this. As I have tried to show, the traditional system of status groups in African states did in fact differ in certain major respects from the Eurasian model. African politicians hint at this when they speak of the socialist or communal aspects of land tenure. The Soviet Africanist, I. Potekhin, touched upon the same point when he abandoned his earlier view that Africa displayed a "patriarchal type of feudalism" and realized that "in the great

majority of African countries the class differentiation of the peasantry is still insignificant" (1963, p. 39). But much obscurity still remains because the analysis has not been pushed far enough, and neither sociologists nor politicians have tried to answer the crucial question of why such differences existed. When they think about it, some writers (e.g., Abraham 1962) resort to unsatisfactory types of explanations (because they are circular) which are phrased in terms of the African personality or pan-African culture. Or, like Marx and Weber, they introduce a series of further subdivisions in their types of (for example) feudal or traditional societies, which, if more useful, is still somewhat limiting, since it drowns the attempt to discover correlations in a flood of descriptive categorizations.

There is one other concrete aspect of the change connected with the new political, economic, and educational systems in Africa that has received little attention and which is seen particularly clearly when we take up the contrast with Europe. When there is a change in the relative political and economic position of a Eurasian aristocracy, whether because of conquest, democracy, industrialization, or the rise of new skills, the families involved still have their land and other possessions on which to fall back—providing that the change stops short of complete dispossession. This property gives them a lever on the new dispensation and helps them preserve a privileged position, even if this has been modified by events. Many European writers have tended to see African chiefships in just such a "feudal" mode and ask the same sort of question about the relation between traditional and modern elites as would be appropriate for the post-Reformation period in Europe. As a result, they are anxious to perceive and describe the situation in terms of class conflict. But, except in exceptional cases, African chiefs were sustained by temporary political dominion rather than by persisting economic power (if we can make a crude distinction), and so could put up little resistance to the changes brought about first by colonial rule and then by independent governments. In any case, chiefs are now a set of individuals, an interest group, rather than a class in the socioeconomic sense. Their kin share in their preeminence only to a limited extent and easily fit into the modern system, for they have little to gain from sticking to the old. In such a situation, the system of elites and of stratification generally is likely to be much more fluid than in Eurasia, and the educational ladder is likely to receive more emphasis as the road to success. "Africa's golden road," to use Kwesi Armah's less-than-fortunate phrase, lies in the fluidity of its system of stratification, which in turn is related to patterns of marriage and of agricultural production. It is critical to note that in all the postindependence upheaval that has taken place on that continent, little violence has been directed toward superior strata, apart

from the colonial rulers themselves. The peasants have revolted against indigenous rulers in two places, Ruanda and Zanzibar, exactly those places where the marriage system stresses the isolation of the political elite. In other parts, the stress on open conubium has tended to produce considerable vertical homogeneity within any area, though this in turn has perhaps increased the differentiation between tribes. Thus the greater fluidity of status is counterbalanced by greater rigidity of tribe; the political results of one are as apparent as the other.

The immediate reason lies in the marriage system. Beyond that lies the basic differences in the nature of agricultural production. Under Eurasian conditions, there is a tendency toward close rather than distant marriages, toward in-marriage and endogamy rather than out-marriage and exogamy. In Africa, on the other hand, the ownership of land was not the main key to economic achievement. The agricultural output of work groups varied within fairly confined limits and in this respect the society was relatively homogeneous. Marriage policy was therefore less firmly directed toward the matching of like with like.

Tylor pointed out that exogamy created ties between groups, thus increasing interaction, whereas endogamy was a policy of isolation. When differences in landholding are a major factor in the social hierarchy and when property is conveyed through marriage and inheritance, a premium is placed upon in-marriage rather than out-marriage, upon endogamy rather than exogamy. This is particularly the case where, to preserve the standing of daughters as well as sons, property is distributed bilaterally (that is, to both sexes) by the process of diverging devolution. This policy of isolation leads to variations of behavior within the culture which tend to crystallize out in gentry subcultures or in differences between richer peasants, poorer peasants, and those with no land at all, a rural proletariat.

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Formal Education and Individual Modernity in an African Society[1]

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The theoretical proposition that formal Western education exerts a modernizing influence on youth in traditional, non-Western societies is tested using structured interview data from a probability area sample of 591 seventeen-year-old males in Kano, Nigeria. Cross-tabular analysis provides evidence of clear and consistent educational influence on modern value orientations which is largely independent of selectivity factors and alternative modernizing forces. The effects are found to be quite uniform across different categories of youth, but variable across different value orientations. There is also limited evidence that school curriculum may be more important than organizational aspects of schools in shaping modern perspectives.

INTRODUCTION

> Formal schooling has now come to be regarded as essential not only for equipping the individual to earn a living but also for equipping Africa's people for nationhood. [Busia 1962, p. 80]

The importance of education for national and individual development has long been recognized by civic leaders and social scientists alike. But whereas civic leaders are inclined to see education as primarily functional in the production of skilled manpower to fill technical and administrative positions in society, social scientists are more apt to stress the role of education in "working to change the balance of different attitudes and values in the population" (Clark 1962, p. 70). This latter function would seem to be particularly important in schools in modernizing societies where, as Anderson (1966, p. 70) notes, "children develop new conceptions of what kind of person they are. They adopt new rules for their conduct and acquire loyalties to new ideas and new groups."

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The expectation that formal schooling leads to new orientations is based in large part on the general theoretical argument that "men's environment, as expressed in the institutional patterns they adopt or have introduced to them, shapes their experience, and through this their perceptions, attitudes and values, in standardized ways which are manifest from country to country, despite the countervailing randomizing influence of traditional cultural patterns" (Inkeles 1960, p. 2).

In applying this general sociological proposition to the question of Western education in traditional societies in Africa or elsewhere, it is hypothesized that formal schooling shapes experiences of youth and, in turn, leads toward standardized changes in their value orientations in a direction congruent with the dominant value emphasis of the educational environment. More specifically, formal Western education is expected to have a modernizing influence on perspectives, that is, to foster values and beliefs such as independence from family and other traditional authority, belief in science and in man's ability to control his fate, and orientation to the future (Inkeles 1966, 1969; Moore 1963, pp. 110–11; Hanson 1964; Turner 1955; Frazier 1955*a*, 1955*b*).[2]

On the other hand, there are obviously limits to the influence of formal schooling. In "traditionalistic" societies (Hoselitz 1961) which seek to preserve their cultural heritage, education may have little or no effect in changing an individual's perspectives. Or education may have only superficial and temporary effects; overt behavior may change, but basic beliefs and values acquired during childhood and reinforced in the home and community may continue to prevail. Moreover, even if value-orientation differences are found between more and less educated individuals, the differences may not be due to educational effects but, rather, to selective recruitment or retention of individuals with different orientations at the outset, or to the influence of alternative modernizing forces which may be correlated with education, for example, urban experience, mass-media exposure, voluntary association membership, and factory experience (Inkeles 1966). Also, the impact of educational experience may be affected by a number of other personal and social background factors, such as ethnic affiliation, family socioeconomic status, religion, intelligence, age, and sex.

These caveats call into question the theoretical expectation that formal Western education has a modernizing effect on values and beliefs of individuals. To what extent and in what way does formal schooling shape the value orientations of individuals in nonindustrial, non-Western society? Closely related are questions concerning the social backgrounds of those who are more affected or less affected by education, the kinds of

[2] We refer to these value orientations as "modern" but recognize their similarity to those sometimes identified as "achievement," "Western," or "American" (e.g., Kahl 1965; Kluckhohn and Strodtbeck 1961, pp. 24 ff.; Nisbet 1969, pp. 191, 285).

value orientations that are most affected, and the aspects of the educational system that are most important in producing the changes—formal organization, curriculum, or other aspects.

These are particularly critical questions in modernizing societies where educational expansion competes with other development programs for scarce resources. They are also important questions in social psychological studies of modernization which are concerned with the nature and determinants of individual change associated with socioeconomic development. However, as Moore (1963, p. 111) points out, systematic empirical evidence regarding the effects of formal education on value orientations is generally lacking.[3]

The present study represents a preliminary investigation of these matters based on structured interview data from 591 young men in Kano City, Nigeria. The research objectives are (1) to establish whether a positive association exists between formal schooling and individual modernity that is independent of other modernizing forces and selectivity factors, and, if an association exists, (2) to specify those personal and social background characteristics of youth and those value orientations which are most resistant and most vulnerable to modernizing influences of schooling, and (3) to explore whether curriculum or organization aspects of formal education systems are more important in producing the observed association.

SETTING, DATA, AND MEASURES

The Hausa society of northern Nigeria is a particularly appropriate setting for an investigation of the modernizing influence of formal education.[4] It is predominantly an Islamic, nonindustrial society and, up to the 1967 military coup, had a religious and political leadership resting heavily upon a substructure of traditional authority dating back to the early 1800s. As such, it was one of the few societies in Africa to maintain an unbroken organizational tie with its past throughout the colonial period. The British administered the territory through a policy of "indirect rule," and European settlement and Christian mission activity were

[3] Among the handful of studies with special relevance to African societies (Doob 1960; Jahoda 1961, 1962; Dawson 1967; Lord 1958; Ainsworth and Ainsworth 1962*a*, 1962*b*, 1962*c*; Omari 1960; Powdermaker 1956), only Doob, Jahoda, Dawson, and Lord include samples differing in educational levels, a distinction that is necessary in order to demonstrate the existence of an association. Furthermore, little or no attempt has been made to control for selective recruitment and retention in schools or for the effects of alternative modernizing forces or of other personal and social background factors.

[4] Although there are many ethnic groups, languages, and cultural variations in the Hausa-Fulani areas of northern Nigeria, for convenience we follow the literature in referring simply to Hausa society.

effectively discouraged. As a result, Hausaland has remained one of the most traditional societies of Africa today, and its people take great pride in their cultural heritage.[5]

Kano, Nigeria, the research site for the present investigation, is an urban center located in the heart of Hausaland and consists of more than a quarter of a million inhabitants. The urban area is divided into three major sections: mud-walled Kano City (Birni), various migrant communities of northern and southern Nigerian immigrants (Waje),[6] and the former European quarter (Nassarawa). Kano City (with a population of approximately 165,000) has a history dating back to the tenth century and is the seat of Native Authority government offices, the central market, and central mosque. It is comprised largely of Muslim Hausa and Fulani residents, many from long-established families, and it reflects much of the traditional character of Hausaland. The migrant and European sections are more modern by contrast and include areas of commerce and light industry. Because of its traditional character, Kano City provides a critical cultural context in which to test the impact of education on value orientations. If Western schooling exerts a clear modernizing influence here, an even greater influence would be expected in less traditional settings.

Data Collection

Data bearing on the issues raised above were collected through structured interviews from all seventeen-year-old males who could be located in a 15 percent probability area sample of Kano City quarters during the spring of 1965. The interviews were conducted by trained indigenous interviewers of slightly older age (eighteen to twenty-one) during the school holiday period when most students were home from school.[7]

[5] For more comprehensive analyses of Hausa society, see Smith (1960, 1965).

[6] These areas include Fagge, originally a camping site for Niger caravans in the nineteenth century but later a modern Hausa residential and commercial district; Sabon Gari, a dense residential and commercial area consisting mainly of Ibo, Yoruba, and other southern Nigerian immigrants; Tudun Wada and Gwagwara, both post–World War II settlements of northern Nigerian immigrants. For a more thorough description of these areas and their relation to Kano City and Nassarawa, see Paden (1970).

[7] The survey instrument was developed after several months in the field. The items were translated into Hausa language by the Youth Officer of the Kano Social Welfare Department, a young, educated native of Kano, and were checked against retranslations from Hausa to English by a local university student. The questionnaire was pretested on twelve young men residing in a rural village thirty miles from Kano and twelve young men residing in Tudun Wada, a satellite community adjacent to Kano and deemed somewhat more modern in outlook by local informants. An inspection of the responses of the two "known" pretest groups resulted in the alteration or elimination of various nondiscriminating items; however, a systematic and rigorous item analysis was not feasible.

Measurement Indexes

The independent variable, educational level, is measured by items asking respondents about the number of years they attended primary and secondary school. The information yields three broad categories: those who have no formal education (52.8 percent), those who have attended one to seven years of primary school (35.7 percent), and those who have gone beyond primary school to at least one year of secondary school (11.5 percent).

Development of an index of the dependent variable, modern value orientation, follows procedures employed by Kahl (1968) in his measurement of modernism. We began by examining previous literature in an effort to identify major theoretical dimensions of modern or Western values and beliefs that might be affected by schooling. From the writings of Weber (1947), Parsons (1951), Becker (1957), and Inkeles (1966) in particular come the concepts of "empiricism" or "belief in science," "secularism," and "receptivity to change," all of which capture the notion of rationalism, while the dimensions of "trust," "futurism," "independence from family," and "mastery" stem largely from the work of Kluckhohn and Strodtbeck (1961) and Kahl (1965).[8] The dimensions of "openness to new ideas," "women's equality," and "ethnic equality" are suggested by various others (Smith and Inkeles 1966; Doob 1967; Hanson 1964; O'Connell 1965; Peshkin and Cohen 1967).

Questionnaire items tapping these ten selected value orientations were independently constructed or borrowed in direct or modified form from questionnaire materials used by Inkeles, Kahl, and others.[9] The internal consistency of items within each of the postulated dimensions was analyzed separately by means of factor analysis, and items were eliminated if their loadings on the principal axis of the unrotated matrix were less than .30.[10] Factor analysis of the remaining items was used as a basis for developing factor weighted composite scores of each dimension.

The dimension scores themselves were then factor analyzed in order to ascertain the extent to which they form a single syndrome of traditional versus modern value orientations.[11] Six of the original ten dimensions were found to have loadings above .30 on the principal axis: independence

[8] Kahl (1965, p. 671) combines Kluckhohn and Strodtbeck's "doing" and "control over nature" dimensions into a single dimension labeled "mastery."

[9] This was done prior to the development and publication of modernity measures by these researchers.

[10] The twenty-two items retained for the modernity measure and their respective loadings on the principal axis of the unrotated matrix are listed in abbreviated form in the Appendix.

[11] A composite measure avoids the necessity of repeating the analysis for each value dimension, and separate measures of each dimension enable investigation of the value

from family, ethnic equality, empiricism, mastery over nature, futurism, and receptivity to change (see table 1). A factor-weighted composite measure of psychological modernity was constructed from these dimensions.[12] For analysis purposes, the distribution was divided at the median into more modern and less modern halves, or "high" and "low" modernity.

We have also identified a number of alternative modernizing forces to be controlled in the analysis: urban experience, factory experience, mass-media exposure, voluntary association membership, and "modern" home

TABLE 1

LOADINGS OF TOP VALUE-ORIENTATION SCORES ON PRINCIPAL AXIS OF FACTOR ANALYSIS

Loading	Value Orientation
.71	Independence from family
.64	Ethnic equality
60	Empiricism
57	Mastery or efficacy
.47	Receptivity to change
46	Future oriented

environment. The first two are largely controlled through sampling restrictions in the present research; all respondents resided in Kano City (with over 80 percent saying they had spent most of their lives in Kano or in other large urban areas), and only a handful had any factory experience.

Radio listening was chosen as an index of mass-media exposure because it does not require literacy and thus is not confused with education. Three categories of respondents were identified: those who listened to news on the radio daily (35.4 percent), a few times each week (38.9 percent), and rarely or never (25.7 percent).[13] Voluntary association membership was

orientations which are more or less influenced by formal education. In other words, the measurement procedures are geared to the present research purposes; alternative measurements may be more appropriate for other analytical purposes.

[12] Kuder-Richardson internal consistency reliability coefficients (Guilford 1965, pp. 458–60) were computed both for the twenty-two items (r_{tt} = .88) and for the six dimensions (r_{tt} = .90) included in the measure. The inferred average interitem correlation (suggested by Guilford 1965, p. 463, as an index of reliability independent of test length) is .25, which is high by conventional standards (Morrison, Campbell, and Wolins 1967). A separate factor analysis of the six dimensions produced a unitary factor structure controlling 34 percent of the variance.

[13] The lower two mass-media categories are combined in the subsequent analysis of partials because of insufficient educational distribution among respondents who "listen rarely or never." Out of the 152 males in this category, only five had some secondary education.

measured in terms of youth club membership because these were virtually the only voluntary associations available to youth in Kano. Thirty percent of the respondents indicated they were members.

The problem of measuring the degree of modernism of home environment is especially difficult in the present study. Parents or other family members of the respondents were not personally interviewed, and direct assessment of their orientations is impossible. Furthermore, strong norms of deference toward elders and sensitive relations between children (especially firstborn) and their parents make it awkward for respondents to answer questions about their parents.

Rather than rely on a single measure, several items are employed as implicit and indirect indexes of parental modernity. The first of these is concerned with whether a respondent's father belongs to one of the Islamic brotherhoods; a respondent whose father is "free," or not involved with either of the two major brotherhoods, is expected to be more secularized with respect to the pervasive Muslim culture, that is, to come from a more modern home environment. Data on father's English literacy, level of schooling, and occupation are also taken as indirect indexes of the modernity of home environments.[14] A respondent whose father is literate in English, has had some formal Western schooling, or is employed in a more "modern" occupation—civil service, professional, other white-collar, or skilled labor, as opposed to religious, trading, craft, or farming—is expected to have a more modern home environment.

Finally, several personal background factors were identified as relevant in testing and specifying the relationship between education and psychological modernity. Ethnic affiliation, socioeconomic status, and intelligence are among the most obvious and important ones, aside from age, sex, and religion, which are held constant through sampling. The first, ethnic affiliation, is measured separately by father's and mother's ethnic group, since interethnic parentage is found among almost one-fourth of the respondents.

Social status is an extremely complex phenomenon in Hausa society (Smith 1959, 1961), and we prefer to use a variety of status indexes rather than rely on a single index or composite score. In addition to father's education, literacy, and occupational status, which are introduced above as indirect indexes of parental modernity but which may also be seen as socioeconomic indexes, social status is measured by respondent's estimates of father's income and family prestige.

[14] The father's education index presumes confirmation of the hypothesis that level of schooling is positively associated with psychological modernity. If confirmed, then it is meaningful to investigate the independent determinancy of respondents' schooling by controlling for parental modernity as measured by father's education. If the hypothesis is false and level of schooling is not associated with modernity, no further controlled analysis will be necessary.

Finally, a "general intelligence" measure is based on respondent scores on an abridged nonverbal test of concept formation developed by the American Institutes for Research (Schwarz 1964, test no. 1, "Similarities"). This test was standardized in Nigeria and was designed as an intelligence test for examinees with minimum education. Although the validity and reliability of the intelligence data may be questioned, especially for nonliterate respondents, the resulting test scores should at least be useful for drawing a broad outline of ability differences for control purposes.

RESULTS

The central proposition of this study is that formal Western education leads to the modernization of perspectives in traditional, nonindustrial societies. It is hypothesized that level of education is positively associated

TABLE 2

LEVEL OF WESTERN EDUCATION AND INDIVIDUAL MODERNITY

	Individual Modernity		
Western Education Level	High (%)	Low (%)	N
Some secondary education	83 8	16.2	68
Some primary education.	55 5	44 5	211
No education..	37 8	62.2	312
Total. . .	49.4	50 6	591

NOTE —γ = 48 and is significant (one-tailed test) at the .001 level.

with modern value orientations and that this relationship is not the result of selectivity processes or of alternative modernizing forces and background factors.

Cross-tabulation of educational level with "high" and "low" individual modernity for respondents in the study is presented in table 2. The evidence indicates a strong positive association between the two variables at a statistically significant level. More than four out of five (83.8 percent) of the respondents with some secondary education score in the upper half of the modernization scale, while less than two out of five (37.8 percent) of those with no formal education do so. The difference in percentages is stronger between respondents with primary and those with secondary education than between respondents with primary and those with no education. In short, the prediction of a positive relation

between Western schooling and psychological modernity is supported by the initial findings.[15]

Selectivity

A serious alternative explanation which may account for these findings is that educational recruitment and retention selectively favor persons with more modern outlooks. That is, those who are more modern in their values and beliefs from the outset are more likely to begin and continue schooling.

The only truly adequate way to test this alternative explanation would be with panel data which would take a cohort of individuals as preschoolers and trace their value-orientation changes during the ensuing years. In the absence of such data, substitute methods must be employed to gain indirect evidence in support of one interpretation or the other.

In the present study, for example, we will examine modernity percentages by number of years of schooling. If selectivity factors are responsible for the observed association, it is reasonable to expect that differences in the percentage of "more modern" respondents would be most pronounced at the *beginning* of primary or secondary school rather than *during* primary or secondary school. This is because the major decisions by youth, parents, and school officials regarding school entrance and termination are made prior to beginning primary or secondary school; once admitted, most students continue until the end of the course, especially students at the secondary level. The restricted number of secondary-school openings makes admittance extremely difficult, and the drop-out rate is virtually nil.[16]

On the other hand, if schooling fosters modern perspectives, as predicted, then we would expect evidence of a steady increment in the proportion of "more modern" respondents with each increasing year of schooling, and there should be no unusually sharp percentage increases at the beginning of the major educational levels.

Examination of the relevant evidence in table 3 reveals a rather steady increase in the percentage of "more modern" respondents with increasing

[15] The association between education and modernity persists and, in fact, is slightly strengthened ($\gamma = .50$) when the influence of acquiescent response set is controlled by removing respondents identified as potentially acquiescent in their responses to Likert-type agree-disagree items. The index of acquiescent response pattern used in this check is described elsewhere (Armer 1970).

[16] Students are not failed or dismissed from secondary schools (although they can be transferred for cause during the second and fourth years), and only very unusual personal circumstances would normally lead a boy to give up his stipend and terminate his schooling (see University of Wisconsin 1963, pp. 45, 70). In our sample, only two out of fifty-eight boys who were enrolled in secondary schools planned not to continue further education. Both had "high" modernity scores.

years of education.[17] The increases immediately preceding primary and secondary school are similar to the increases from year to year within school levels. In short, the evidence tends to support the argument that educational experience has an influence on the value orientations of the Kano respondents. Of course, with the present data, we cannot completely rule out the possibility that selectivity factors may account for some of the association.

TABLE 3

PERCENTAGE OF "HIGH" INDIVIDUAL MODERNITY BY YEARS OF FORMAL WESTERN EDUCATION

	WESTERN EDUCATION LEVEL									
	No Education	Primary Education				Secondary Education				
	0	1–3	4–5	6	7	1	2	3	4+	TOTAL
High individual modernity	37 8	42 0	56 9	57 7	64 7	75 0	80 0	90 9	94 1	49 4
N	(312)	(50)	(58)	(52)	(51)	(20)	(20)	(11)	(17)	(591)

NOTE —γ = 45 and is significant (one-tailed test) at the .001 level.

Alternative Modernizing Forces

We have also noted the need to control for other commonly mentioned modernizing forces in testing the association between formal schooling and individual modernity. The relationships between educational level and individual modernity, while partialing on mass-media exposure and voluntary association membership, and the four parental modernity indexes are presented in table 4. To facilitate reading the table, only percentages of "high" modernity scores are reported.

Among the forty-two respondents who "listen to radio news daily," 85.7 percent of those with some secondary education have modern value orientations, compared with only 55.3 percent of those with primary schooling and 46.6 percent of those who have not had any formal education. Clearly, the relationship between level of education and individual modernity persists among the respondents who have daily exposure to radio news, and it also persists among those who have less than daily

[17] It is necessary to combine the first through third and the fourth through fifth primary-school years in order to achieve large enough sample sizes to compute reliable percentages. Primary schooling is normally seven years in length, although a handful of students repeat grades and a few are able to skip the seventh year if they pass the Common Entrance Examination for secondary school. Secondary-school courses generally continue for five years. At the time of the present study, the seventeen-year-old respondents in our sample were normally at the third or fourth year of secondary school if they had begun school at age seven and had continued their education steadily without interruption. However, many students start school late or fail their entrance examinations for one or more years. This probably accounts for the smaller numbers of respondents in our sample in the later years of secondary school.

exposure. Moreover, a positive association between education and individual modernity is also found within both categories of respondents on the index of voluntary association membership and within each of the categories on the four parental modernity indexes. In the case of respondents whose fathers are literate or are in modern occupations, the number of respondents who have had no formal education is too small to compute reliable percentages, but the differences in modernity percentages continue to appear between primary- and secondary-education levels.

In sum, the evidence indicates that the association of formal schooling and modernization is largely independent of these alternative modernizing forces and cannot be readily explained or interpreted by any of them. Also, it is clear that combining the items into a composite index would

TABLE 4

PERCENTAGE "HIGH" INDIVIDUAL MODERNITY BY LEVEL OF EDUCATION, CONTROLLING INDEXES OF ALTERNATIVE MODERNIZING FORCES

	LEVEL OF WESTERN EDUCATION			
PARENTAL MODERNITY INDEXES	Some Secondary	Some Primary	No Education	γ*
Mass-media exposure:				
Listens to radio news daily	85 7 (42)†	55 3 (94)	46.6 (73)	44
Listens few times, rarely, or never	80.8 (26)	55.6 (117)	35 1 (239)	.48
Voluntary association membership:				
Member of a youth club	89.1 (46)	56 0 (84)	46 9 (49)	52
Not a member	72 7 (22)	55 1 (127)	36 1 (263)	.41
Father's Islamic brotherhood:				
Belongs to a brotherhood	84 8 (33)	49 7 (143)	32 9 (228)	47
"Free" or no brotherhood	82 4 (34)	67 2 (67)	51 8 (83)	41
Father's English literacy:				
Yes, literate	94 1 (34)	60 6 (71)	(18)	59
No, illiterate	73.5 (34)	53.2 (139)	36 5 (282)	40
Father's formal education:				
Some primary school or higher	87 2 (39)	57.4 (101)	43 8 (48)	.51
No education	79 3 (29)	53 6 (110)	36.1 (264)	43
Father's occupation:				
"Modern" occupations	89 2 (37)	61.8 (55)	. . (13)	.45
"Traditional" occupations	77.4 (31)	53.2 (156)	36.5 (299)	41

* All γ significant (one-tailed test) at the .001 level.

† Numbers of respondents are in parentheses.

not alter the pattern of results. The findings add further support to the proposition that formal Western education does indeed have a strong, direct, and independent resocializing influence on value orientations of the Kano respondents.

Personal Background Factors

We have also suggested several other factors which may have a bearing on the observed relationship. The variables of ethnic affiliation, social status, and intelligence are viewed less as alternative modernizing forces than as potential conditioning variables, that is, as factors which may specify categories of youth that are more susceptible or more resistant to educational influences.[18]

The results of partialing on the ethnic, social status, and intelligence measures are reported in table 5. The results of partialing on alternative modernizing forces in table 4 may be reexamined concurrently, with an eye to specifying conditions under which the association appears strengthened or weakened.

The data in table 5 reveal a clear association between "high" modernity and educational level for each of the subsamples defined by the personal background variables. For example, among respondents with Fulani fathers, "high" modernity increases from 43.9 percent of those with no education, to 68.9 percent of those with primary schooling, and finally to 81.4 percent of those with secondary schooling. Although the Fulani are much more likely to attend school and to hold modern value orientations than respondents of other ethnic groups, the strong association between these two variables cannot be explained by ethnic differences.

The same general pattern of results and conclusions is indicated for Hausa respondents and for the various subsamples with respect to mother's ethnic affiliation, family economic status, subjective family prestige, and measured "general intelligence." For each category there exists a substantial, monotonic increase in percentage of "high" modernity by level of formal schooling. The pattern was also found in table 4 with respect to father's English literacy, father's education, and father's occupation.

By using the association between formal education and modernity for the total sample as a standard of comparison, the results in table 5 may be examined to see whether the association is substantially stronger or weaker for the particular categories of respondents. In general, a pattern

[18] Of course, it is also possible that one or another of these variables may help interpret or explain the association, but we are introducing them as potential specification variables. The terms "specify," "interpret," and "explain" are used in the sense defined by Lazarsfeld (1955).

of slight specification occurs with all the control variables in table 5. The statistical association is slightly stronger for respondents with Fulani parents, higher social status, and higher intelligence, and it is slightly weaker for respondents with Hausa parents, lower social status, and lower intelligence. The greatest reduction in association occurs for lower-intelligence respondents, among whom only eleven have any secondary schooling, and the percentage difference in modernity between respondents in the lower two education levels is only 11.7 percent compared with 17.7 percent for the total sample.

In no case is the difference in degree of association striking, and in no category does the association fail to persist at substantial and statistically significant levels. The same pattern of results is indicated in a re-examination of table 4, except that there is no strengthening of the

TABLE 5

PERCENTAGE "HIGH" INDIVIDUAL MODERNITY BY LEVEL OF EDUCATION, CONTROLLING FOR PERSONAL BACKGROUND VARIABLES

Personal Background Variables	Level of Western Education			
	Some Secondary	Some Primary	No Education	γ*
Total sample	83.8 (68)†	55.5 (211)	37 8 (312)	.48
Father's ethnic group:‡				
Fulani	81 4 (43)	68 9 (61)	43.9 (57)	51
Hausa	. . (16)	52 0 (123)	37 1 (224)	41
Mother's ethnic group:‡				
Fulani	79 5 (44)	61 5 (65)	39.1 (69)	52
Hausa	90 9 (22)	54.0 (124)	38 4 (224)	43
Father's income:				
High (£10/month or more)	89.1 (46)	50 4 (117)	37 2 (94)	54
Low (less than £10/month)	. . . (18)	64 0 (75)	42 7 (157)	42
Subjective family prestige:				
Very or fairly high	85.0 (40)	58.6 (116)	35 8 (123)	55
Average or below	82 1 (28)	51.6 (95)	39 4 (188)	40
Measured "general intelligence":				
Higher	84.2 (57)	62.8 (113)	43.4 (99)	51
Lower	. . (11)	46.9 (98)	35 2 (213)	32

* All γ significant (one-tailed test) at the .001 level.

† Numbers of respondents are in parentheses.

‡ Respondents with mothers and fathers belonging to other ethnic groups, e.g. Kanuri, are eliminated for this partial analysis. There are sixty-seven respondents with fathers who are not Hausa or Fulani and forty-three whose mothers are neither Hausa nor Fulani.

association among subsamples when partialing is done on mass-media exposure, father's Islamic brotherhood membership, and father's occupation. In each of these cases, the magnitude of association remains the same or is slightly lower than for the total sample.

The general conclusion apparent from these results is that the association of formal Western education and individual modernity is not highly specific to certain categories of youth but, rather, tends to be comparable in strength for all, regardless of background differences. To the extent that a tendency exists, it is toward a stronger association among Fulani, higher-status, more intelligent respondents with literate, more educated fathers. Among youth with these characteristics, the data suggest that schooling may have a slightly greater modernizing influence.

Value-Orientation Dimensions

We have also raised the question of whether certain value orientations are more vulnerable or resistant to educational influence on the perspectives of youth in Hausa society. At the outset, we identified ten dimensions suggested in the literature as potentially influenced by formal Western education. Six which were strongly associated in a common factor were combined and used as a summary measure of individual modernity in the preceding analysis. But there is no reason to assume that these six are associated to the same degree or in the same way with formal education, nor is there reason to assume that the remaining dimensions are not also associated with education.

Table 6 reports the association of education with each of the ten value orientations ordered from top to bottom in terms of their loadings on the principal axis of our original factor analysis of psychological modernity. The distribution of scores on each dimension has been divided as closely as possible to the median, and percentages in the table indicate proportions of respondents at each educational level who score in the upper half (or "more modern" side) of the distribution.

It will be noted that most, but not all, of the dimensions are clearly and positively associated with formal education. In particular, independence from family is very strongly associated; 85 percent of the respondents with secondary education indicate independence, compared with 41 percent of those with no education. Education is also strongly associated with the dimensions of empiricism and futurism and, to a moderate extent, with the dimensions of ethnic equality, mastery, openness to new ideas and experiences, and interpersonal trust. On the other hand, receptivity to change, secularism, and women's equality are not strongly associated with education, and there is even a reversal in the percentages of secular orientations by level of schooling. In sum, there

are substantial variations in the magnitude and pattern of associations between formal education and the separate value orientations.

Curriculum versus Social Organization

We have been using the phrase "formal Western education" in much of the preceding discussion and analysis because both formal social organization characteristics and Western curriculum factors have been suggested as responsible for modernizing the perspectives of young people who attend school. Inkeles (1966, p. 147; 1969, p. 213) calls special

TABLE 6

PERCENTAGE OF RESPONDENTS WITH HIGH SCORES ON TEN VALUE ORIENTATIONS, BY LEVEL OF EDUCATION

	LEVEL OF WESTERN EDUCATION				
VALUE-ORIENTATION DIMENSIONS	Some Secondary	Some Primary	No Education	γ	SIGNIFICANCE
Independence from family	85.3	58.3	41.0	.47	***
Ethnic equality	79.4	44.5	43.3	.26	***
Empiricism	67.6	51.7	31.4	.45	***
Mastery or efficacy	69.1	52.1	43.9	.26	***
Futurism	64.7	51.7	35.3	.37	***
Receptivity to change	51.5	47.4	44.2	.08	N.S.
Secularism	65.2	41.7	51.8	.01	N.S.
Openness to ideas and experiences	58.8	46.9	38.1	.23	***
Women's equality	57.4	49.8	44.9	.14	*
Interpersonal trust	60.3	57.3	46.2	.21	**
N	(68)	(211)	(312)		

* Significant at .05 level (one-tailed test).
** Significant at .01 level (one-tailed test).
*** Significant at .001 level (one-tailed test).

attention to the former, although he does not ignore the facilitating effects of "modern curriculums," and Moore (1963, p. 110–11) likewise notes "significant characteristics of formal structure" of the "modern secular school" which provide "the possible environment for learning certain rather important attitudinal orientations for a changing social structure" (see Dreeben 1968 for an elaboration of this thesis).

It is not possible to tell from the preceding findings whether the effects of education on perspectives are due primarily to the Western curriculum or to the structural characteristics of the formal educational system, or to other factors.[19] A preliminary effort to investigate this issue can be made in the present study by using the following line of reasoning. If structural effects are more important than curriculum effects, then mod-

[19] Among other factors which may play an important role is the social composition of schools. We lack appropriate data to investigate this matter in the present research.

ernization of perspectives should also tend to result from formal educational systems with nonmodern, non-Western curriculums; on the other hand, if curriculum effects are more important, then we would expect differences in the modernization of perspectives in Western and non-Western formal educational systems.

The Muslim Koranic schools in Kano are an example of such a non-Western system. In these schools, the first four to six years normally consist of learning to read and write Arabic script and memorizing consecutive passages of the Koran. After a student has gone through the Koran in this fashion, he is "graduated" and starts again at the beginning, this time receiving fuller instruction from the *mallam* (Koranic teacher) on the meaning of passages and other religious knowledge.

Actually, Koranic schools vary considerably in level of organization, ranging from a handful of students at the feet of a *mallam* to classroom situations with students grouped according to level of instruction. In general, however, the formal organizational characteristics of Koranic schools are similar to institutionalized characteristics of other formal educational systems; for example, they involve a "graded curriculum and more or less orderly sequence of studies" (Moore 1963, p. 110), separation from home, regular hours of instruction, continuous testing and evaluation of individual performance, and objective and universal standards of progress (see Tukur 1963 for details).

Of course, these characteristics are not handled in exactly the same way as in Western schools, because of curriculum and cultural differences, but they are conceptually equivalent. If such organizational characteristics serve as models "of rationality, of the importance of technical competence, of the rule of objective standards of performance, and of the principle of distributive justice reflected in the grading system" (Inkeles 1966, p. 147) in Western schools, they should promote similar value orientations in Koranic schools.

On the other hand, if curricular, rather than organizational, features of educational systems are more important in shaping perspectives, the effects of Koranic education with its nonmodern curriculum may be quite different from the effects of Western education. We call the Koranic school curriculums nonmodern rather than traditional because, as Tukur (1963) stresses, they are not necessarily opposed to modern orientations, especially in the first several years, which emphasize Arabic reading, writing, and rote memorization. Thus, to the extent that curriculum effects are important in producing modernity, little or no change in modernity would be expected to result from Koranic education, but to the extent that organizational effects are important, modernity should be positively associated with level of Koranic education as with other formal educational systems.

Evidence regarding modernity levels associated with Koranic education is presented in table 7. The results show a slight tendency for individual modernity to be *negatively* associated with more years of Koranic education rather than positively associated, as would be expected if formal organization characteristics of the educational system were primarily responsible for the modernization of perspectives.

A further test of curriculum effects may be made by comparing the degree of modernity among students in different types of secondary schools instituted by the British in Hausa society: (1) secondary grammar schools, with standard academic curriculums corresponding to British grammar schools; (2) teacher-training "colleges," with curriculums designed to produce primary-school teachers; and (3) other schools, including craft and technical schools, clerical schools, and various Ministry training schools in agriculture, hygiene, and veterinary medicine. The social organization of these secondary schools is virtually identical, but the curricular emphases range from classical academic education to locally relevant applied training. Evidence of equally high rates of modernity among respondents with different kinds of secondary-school experience would suggest the importance of formal organization effects, while modernity differences would suggest curriculum or other effects (see table 8).

TABLE 7

YEARS OF KORANIC EDUCATION AND INDIVIDUAL MODERNITY

Koranic Schooling	Individual Modernity			
	High	Low	N	Yule's Q
Less than six years	53.3	46.7	347	.19*
Six years or more	43.9	56.1	244	

* Significant at .05 level (one-tailed test).

TABLE 8

TYPE OF SECONDARY SCHOOL ATTENDED AND INDIVIDUAL MODERNITY

Type of Secondary School	Individual Modernity			
	High	Low	N	γ
Secondary grammar school	96.7	3.3	30	.68*
Teacher-training "college"	79.2	20.8	24	
Other (craft and technical, clerical, etc.)	64.3	35.7	14	

* Significant at .001 level (one-tailed test).

The results in table 8 tend to reinforce the previous emphasis on the

importance of modern curriculums or other factors besides organizational characteristics of the schools. Substantial differences in proportions of more modern respondents are observed among those experiencing different kinds of secondary schooling; 96.7 percent of those with secondary grammar school education score "high" on modernity, compared with approximately 79.2 percent of those with teacher-training experience and 64.3 percent of those with other types of secondary-level education.

Of course, this evidence is far from definitive because of the possibility of selective recruitment to different types of schools.[20] But, taken in combination with the previous results, these data offer consistent, preliminary support for the suggestion that the curriculum may be more effective in producing differences in psychological modernity than is the formal organization of the school. That is, without our denying the probable effects of both (and other factors), the more important modernizing factor of formal Western education may be not that it is *formal* but that it is *Western*.

DISCUSSION

The findings in this study clearly and consistently support the view that Western education does, indeed, have a definite effect on value orientations of youth that is largely independent of the test factors mentioned and is not specific to particular sample subpopulations. The results also call attention to the importance of school-curriculum differences in determining the nature of value-orientation change, and they suggest a less important role for the formal organization of the school.

These findings are particularly relevant to the theoretical argument, stated so well by Inkeles, that the institutions to which men are exposed shape their experiences and, in turn, their values, beliefs, and perceptions, despite differences in cultural background. This theoretical position is certainly supported by the findings of the present study, but there is a danger in assuming that institutions going by the same name have the same effects. Formal educational institutions may have much in common,

[20] Since the evidence in table 5 indicates that intelligence is associated with modernity and since a major factor in selecting students for different types of secondary schools is examination results (which presumably reflect measured intelligence), intelligence level is among the most likely background factors that may account for the observed differences in modernity percentage by type of secondary schooling in table 8. However, when we examine just the secondary-school-educated respondents with high intelligence, the association persists: high modernity is found among all twenty-six (100 percent) of those with secondary grammar schooling, sixteen out of twenty-one (76 percent) of those with teacher-training schooling, and six out of ten (60 percent) of those with other types of secondary schooling ($\gamma = .82$, significant at .001 level). Limitations of sample size reduce the reliability of these percentages and preclude testing the influence of other background differences on the association between type of schooling and modernity.

but they also can have much that is not held in common, particularly in the curriculum area. And it may be in areas of diversity such as this that the greatest influence is exerted on experiences of individuals and in turn on their beliefs, values, and perceptions. It is tempting to view formal educational influences as necessarily converging to produce a common set of attitudinal characteristics, and there may in fact be such convergences resulting from schooling in many areas of the world, but our evidence suggests that convergence is not necessary, that differences in perspectives can be fostered by different formal educational systems, and that caution should be exercised in generalizing about the value-transition effects of unspecified formal educational systems.

With respect to Kano City, the evidence suggests that education has a definite influence on value orientations and that education successfully leads to modernization of perspectives in certain areas (e.g., independence from family, empiricism, futurism) while it has little or irregular effect on other perspectives (e.g., secularism, women's equality, receptivity to change). Reasons for these associations can readily be suggested on a post hoc basis, but we do so only with full acknowledgment that the justifications are conjectural. Our main contention, stemming from the findings presented above, is that independence, empiricism, and futurism are probably among the dimensions most clearly embedded in the implicit and explicit curricular content of Western schools, as well as in their formal organization, as suggested by Inkeles, Moore, and others. Conversely, schools take care not to challenge religious beliefs; in fact, religious instruction has been incorporated into the school curriculum by Nigerian authorities. Thus, it is perhaps not surprising that religious beliefs (including belief in women's inferior status) are not clearly associated with educational experience in Kano.

The low association of educational level and receptivity to change may be partially a function of the feeling among many of the less educated respondents that changes (either traditional or modern) are needed to improve their living conditions and future prospects, while many of the primary- and secondary-educated respondents may be satisfied with their life circumstances and may be opposed to change, especially change in a traditional direction which would perhaps not be in their interest.

It cannot be claimed that all possible alternative determinants of individual modernity have been tested in the present study, nor can the possibilities be disregarded that selectivity factors may account for some of the association between education and modernity and that the association may not hold for different samples or in different settings. But all efforts to test these alternative interpretations and qualifications failed

to produce evidence contrary to the major thesis. Indeed, one of the most striking and unusual aspects of the results is the consistent pattern of replication throughout the numerous tests and checks. In short, the evidence provides strong support for the proposition that education affects value orientations of youth in nonindustrial societies, and the effects may be even greater in less traditionalistic societies.

APPENDIX

ITEMS AND PRINCIPAL AXIS LOADINGS BY VALUE ORIENTATION

Loadings	Abbreviated Items*
	1. Independence from Family
75	Should live near parents, even if means losing better place elsewhere. (A/D)†
73	Is better to hire a relative, even if less qualified than a stranger. (A/D)
51	I (greatly/slightly/do not) prefer work that is close to home.
	2. Ethnic Equality
73	Boys should protect own tribe and let others look out for themselves. (A/D)
71	Sports and friendships with other tribes are risky or impossible. (A/D)
39	Outsiders bring more (harm/good) to this country.
36	I (do not/slightly/greatly) prefer work with people of other tribes.
	3. Empiricism
64	(Prayer/medical care) is most important in recovery from illness.
61	There (should not/should) be scientific study of such things as human birth and plant life.
60	Certain diseases only Hausa practitioner can cure. (A/D)
	4. Mastery or Efficacy
69	Man (should not/should) strive for more food and possessions, even if he has enough to get by.
62	Man who plans has as many difficulties as man who does not. (A/D)
47	I (greatly/slightly/do not) prefer work that is easy.
42	A man's success (is predetermined/depends upon ambition and hard work).
	5. Futurism
75	Should dedicate self to (conserve customs/assure good future).
65	Things of the (past/present/future) should be of greatest concern to us.
39	I prefer to plan ahead on (few/most) matters.
38	I (do not/slightly/greatly) prefer work that promises future advancement.

* All items are stated here in the same direction from traditional to modern choices. Sixteen of the items have been reversed from the way they are stated in the questionnaire for factor-analysis purposes

† A/D refers to agree-disagree-type questions. All others are multiple-choice or polar choice

APPENDIX—*Continued*

Loadings	Abbreviated Items*
	6. Receptivity to Change
72	Is never wise to change rapidly in government or economy. (A/D)
.68	People are content with present way of life and do not want changes (A/D)
.37	If you change things much, you usually make them worse. (A/D)
.34	The amount of change in way of life should be (slower/faster).
	7. Secularism
65	Should give alms to poor because (fear of God/compassionate).
.60	Should follow (religious men and sacred books/own conscience)
48	(Need not be/should be) respectful of other religions.
.42	A boy (cannot/can) be truly good without any religion.
34	Heaven is for (own religion only/good people of other religions also).
	8. Openness to Ideas and Experiences
64	Is all right for people to criticize sacred social matters. (A/D)
59	Is best to seek new and different experiences rather than familiar (A/D)
58	I (do not/slightly/greatly) prefer work that offers new experiences
30	Persons should (always/sometimes/never) be allowed to express minority ideas.
	9 Women's Equality
.80	Girls (should not/should) have educational opportunity.
67	Women (cannot/can) be trusted as much as men
61	Girls' freedoms should be (not changed/increased).
	10. Interpersonal Trust
69	(Most/few) people are deceptive and dishonest.
64	If you trust and show respect, people (will not/will) treat you fairly.
.46	Most people are honest through fear of being caught. (A/D)

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American Sociology and Black Assimilation: Conflicting Perspectives[1]

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The theme of the eventual assimilation of the racial and ethnic minorities of the United States has been a recurrent preoccupation of American sociology. This paper examines some of the major arguments which have appeared in the sociological literature in support of the view that the outcome of race relations in the United States will be the assimilation of the Negro into American mainstream culture. The affinity of sociological with liberal views of the racial question is noted, and it is concluded that a perspective which takes account of the social forces generating ethnicity as well as those favoring assimilation is necessary for an accurate and relevant analysis of the role of ethnic and racial groups in American life.

INTRODUCTION

The failure of sociologists to anticipate and direct their research attention to new developments in American race relations during the 1960s has been acknowledged by Hughes (1963) and Pettigrew and Back (1967, pp. 714–16). Rossi (1964, pp. 125–26) noted that "it is sadly ironic that as the pace of change in race relations stepped up in the past four years, the volume of social science research has declined during the same period." With the exception of projects sponsored by the federal government—most notably, the so-called Coleman and Moynihan reports (Coleman 1966; Rainwater and Yancey 1967)—significant in terms of their potential impact on national policy but resting on the theoretical foundations of an earlier period of basic research (Tumin 1968, pp. 118–

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19), the picture Rossi sketched remains relatively unchanged; his call for research into the black movements, the political aspects of racial change, and the role of ethnicity in American life has been met by only a handful of sociologists. Despite two recent studies by Bell (1968) and Levy (1968), the civil rights movement of the early sixties remains largely uncharted by sociologists. Similarly, the black-power and nationalist movements which succeeded it, as distinct from the earlier Muslim movement (about which there are able accounts by Lincoln [1961] and Essien-Udom [1962]), remain virtually *terra incognita* within the sociological profession.

As an explanation for this failure, Hughes suggests that the concern with professionalism among sociologists has impaired their capacity to empathize with the movements of lower strata; Pettigrew and Back (1967, p. 706) refer to the timidity of foundations, the obstacles placed in the way of race-relations research by diehard white segregationists, and "a sociological bias in race relations toward studying the static and segregation-making elements." It is the thesis of this paper that the failure can be attributed in part to the theoretical framework through which most American sociologists have viewed race relations in the United States. This framework, it is believed, rests essentially on the image of American society which has been set forth by American liberalism, wherein the minority problem is defined in the narrow sense of providing adequate, if not equal, opportunity for members of minority groups to ascend as individuals into the mainstream culture. America, in this view, is the land of opportunity through competitive struggle in the marketplace; it can, and will, provide opportunities for all to gain just rewards for their individual merit. (American liberalism differs with American conservatism largely over the issue of whether the opportunities already present are adequate and takes its reformist cast from its recognition that they are not.)

Sociologists, by and large, have accepted this image of Horatio Alger in the Melting Pot as the ideal definition of American society. Although they have repeatedly documented the discrepancy between social reality and cultural myth in America, they have also taken the view that the incorporation of America's ethnic and racial groups into the mainstream culture is virtually inevitable. (Similar tendencies can be discerned in the field of social stratification, according to Pease, Form, and Rytina 1970.) Successful assimilation, moreover, has been viewed as synonymous with equality of opportunity and upward mobility for the members of minority groups; "opportunity," in this system, is the opportunity to discard one's ethnicity and to partake fully in the "American Way of Life"; in

this sense, assimilation is viewed as the embodiment of the democratic ethos.

The convergence of liberal and sociological thought in the area of race relations is striking and raises serious questions about the "value-free" character of sociological inquiry in this area.[2] This is particularly the case since the equation of assimilationist with democratic values in minority-majority relations is by no means universal even within Western culture (Schermerhorn 1959). The right of national self-determination has played a significant role in the liberal-democratic movement in Europe, and as Myrdal (1944, p. 50) noted, "the minority peoples of the United States are fighting for status in the larger society; the minorities of Europe are mainly fighting for independence from it."

Equally remarkable, perhaps, is the fact that assimilationist values, with their connotations of elitism and a monocultural society, have come under as little attack as they have from either liberal or radical social criticism in the United States. The philosophy of democratic cultural pluralism has had, in fact, able spokesmen in America, most notably during the period of World War I (Bourne 1964) and the twenties (Kallen 1924), but the issue of ethnic pluralism has not been a central preoccupation of the American Left until the recent emergence of the black-power movement. This can be traced, perhaps, to the ascendancy in the thirties of Marxian modes of thought in Left circles and the resulting preoccupation with economic and political questions, on one hand, and working-class solidarity, on the other.

The aim of this paper is to examine some of the major arguments which have appeared in the sociological literature in support of the view that the outcome of race relations in the United States will be the integration or assimilation[3] of the Negro into the American mainstream. The widespread and uncritical acceptance of these arguments by sociologists, it is believed, has contributed heavily to the void in race-relations research

[2] Horton (1966) has stated that "the liberal tendency of American sociology . . . is particularly marked in the sociological analysis of the Negro question. . . . The liberal fate of minorities, including Negroes, is basically containment through socialization to dominant values" (pp. 707–8). He goes on to argue that "contemporary liberalism . . . is a variant of conservative order theory" (p. 707).

[3] The terms "integration" and "assimilation" are not necessarily synonymous. Integration, especially as it was used in the fifties, can have the limited meaning of "desegregation" (particularly de jure) and, sociologically, need not be followed by assimilation in the usual sense of cultural merger. Most sociologists have seemingly assumed, however, that desegregation would be followed by the gradual movement of blacks into mainstream American culture, and that racial characteristics would gradually lose their significance as determinants of social status and identity, and it is this assumption which is called into question here (see also Gordon 1964, pp. 246–47). The tendency for sociologists to use the two terms interchangeably is apparent in the writings of Hauser (1966*a*, 1966*b*).

which has been noted above, as well as to the tendency to regard black-nationalist movements as "extremist" (Glazer and Moynihan 1963, p. 78), "escapist" (Morsell 1961, p. 6), and essentially deviant-pathological phenomena.[4] It will be pointed out that some of the components of a revised perspective on American race relations can already be found within the sociological literature and that a new perspective will include (1) abandoning the idea that racial assimilation in the form of gradual absorption of black Americans into the middle-American mainstream is necessarily either inevitable or desirable from the standpoint of democratic values, (2) a recognition that forces producing ethnicity as well as forces favoring assimilation are operative in American society today and that a realistic analysis of the ethnic and racial situation will take both into account, (3) a more balanced view of "black pluralism" (Killian 1968, p. 135) than has thus far appeared in the work of most sociologists. In short, it is argued that a rethinking of the theory of eventual assimilation will open up prospects for a more pertinent and realistic assessment of minority problems, particularly race problems, in the United States.

The arguments favoring eventual assimilation will be grouped under two headings: (1) those which rest on assertions about the nature of the dominant white American society, (2) those which rest on assertions about the nature of minority groups and experience within this society.

ARGUMENTS FROM THE NATURE OF THE DOMINANT WHITE SOCIETY

Central to the view of those sociologists who have taken the position that racial assimilation is the key to the American racial problem are certain beliefs about the nature of modern society in general, and American society in particular, which imply that prejudice, discrimination, and racist institutions are incompatible with the major features of modern social organization and hence will eventually "wither away." These assertions have taken various forms, but the common thread running through them has had several consequences: (1) the liberal optimism of most sociologists with respect to the possibility of peaceful and orderly change in the direction of racial integration;[5] (2) the belief that the major

[4] For a different view, see Gregor (1963, p. 431), who writes that "Negro proletarian radicalism has stood, largely mute, beyond the pale of American intellectual life." An effective rationale for the study of such movements has been made by Record (1956).

[5] Even in the sixties, after the appearance of solidly organized white resistance in the South (Vander Zenden 1959*a*, 1959*b*, 1965) sociologists gave voice to this optimism in uninhibited terms. Rose, for example, wrote (1965, p. 7) "there could be no doubt that the races were moving rapidly toward equality and desegregation by 1964. . . . The change had been so rapid . . . that this author ventures to predict—if current trends continue—the end of all legal segregation and discrimination to a mere shadow in two decades. These changes would not mean that there would be equality between

locus of institutional racism lay in the South, as a kind of underdeveloped area, the modernization of which would remove most of the institutional supports of racism; (3) the belief that the vestigial remains of racism in the urbanized and industrialized North would disappear as the educational, economic, and occupational status of both blacks and whites improved in the direction of greater affluence and security for all. Clearly, this perspective ill equipped sociologists for the racial crises of the sixties, a period of rapid economic growth and high prosperity which nonetheless witnessed heightened racial tension, urban ghetto violence on an unprecedented scale, and marked racial polarization (National Advisory Committee on Civil Disorders 1968).[6]

Robert E. Park and the Race Relations Cycle

In 1926, one of the most famous and influential statements of the theory of eventual assimilation was made by Robert E. Park (1950, pp. 149–50): "In the relations of races there is a cycle which tends everywhere to repeat itself. . . . The race relations cycle which takes the form . . . of contacts, competition, accommodation and eventual assimilation, is apparently progressive and irreversible. . . . Racial barriers may slacken the tempo of the movement, but cannot change its direction. . . . The forces which have brought about the existing interpenetration of peoples are so

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the races within this time . . . but the dynamic social forces creating inequality will, if the present trends continue, be practically eliminated in three decades."

[6] The emergence of the black movement in the sixties and the racial crises which followed forced sociologists to acknowledge, ex post facto, the resistance of American society to racial integration. They were quick to apply the retrospective wisdom that social change entails strain and conflict and that racial conflict may have positive functions (Himes 1966). Mounting black pressure was accounted for, again ex post facto, by an application of reference-group theory in the form of the notion of "relative deprivation" (Pettigrew and Back 1967, pp. 694–96). It should be noted that insofar as this theory assumes that the black movement is the product of actual *gains* made by blacks since World War II, it is open to question since the extent of black gains, especially vis-à-vis whites, in this period is not clear. On the negative side, for example, residential segregation increased in American cities between 1930 and 1960 (Hauser 1966*b*, pp. 76–77), and there was virtually no change in the ratio of nonwhite to white family income between 1947 and 1964 (Fein 1966, p. 122). Moynihan points out (1966, p. 189) that the acknowledged growth of the black middle class may not be accompanied by improvement in the condition of the black lower-class majority and, in *The Negro Family: The Case for National Action,* claims that the black family is in a state of decline (Rainwater and Yancey 1967). Wright (1967), citing comparative data from the U.S. Census, disputes the notion of the rapid socioeconomic advance of the Negro since World War II. Finally, Wilhelm and Powell (1964) find the roots of the black movement not in Negro advance, but *retrogression:* "With the onset of automation, the Negro is moving out of his historical state of oppression into uselessness. . . . He is being removed from economic participation in white society"; and his nascent nationalism constitutes a "quest for identity" (pp. 3–6). In short, the theory of relative deprivation as an account of black unrest has yet to be adequately tested.

vast and irresistable that the resulting changes assume the character of a cosmic process." The universality and inevitability of this "cosmic process" along with other formulations of race-relations cycle theories have long since been questioned by many sociologists,[7] but the acceptance of some form of melting-pot theory as descriptive of American society has been strongly maintained nonetheless.[8]

An ambiguity with respect to Park's (1950) views on the eventual assimilation of the American Negro should be noted. In 1913, for example, he wrote:

> Under conditions of secondary contact, that is to say, conditions of individual liberty and individual competition, characteristic of modern civilization, depressed racial groups *tend to assume the form of nationalities* [italics mine]. A nationality, in this narrower sense, may be defined as the racial group which has attained self-consciousness, no matter whether it has at the same time gained political independence or not. . . . The fundamental significance of the nationality movement must be sought in the effort of subject races to substitute, for those supplied to them by aliens, models based on their racial individuality and embodying sentiments and ideals which spring naturally out of their own lives. . . . In the South . . . the races seem to be tending in the direction of a bi-racial society, in which the Negro is gradually gaining a limited autonomy. [Pp. 219–20]

Frazier (1947, p. 269) noted that even up to "about 1930, Park's sociological theory in regard to race relations did not go beyond the thesis of a bi-racial organization." Hence, if Park believed in the eventual assimilation of races in the United States, his attention as an observer in the contemporary situation was strongly focused on the emergence of a black "national consciousness." Insofar as he regarded the growth of such a consciousness as a stage in the process leading to eventual assimilation, however, his cycle theory can be regarded as one of the more potent influences in the direction of viewing assimilation as a natural and inevitable process in the evolution of modern society.[9]

[7] Berry (1958, pp. 128–49) provides a useful and critical survey of Park and others' cycle theories. Etzioni (1959) presents a systematic critique of Park's views in the context of his review of Wirth's *The Ghetto* (1928). He points out that there is no a priori reason for regarding assimilation as the inevitable outcome of culture contact, and that Park's theory, because it fails to specify the temporal span of and conditions producing each phase, can accommodate any observation and hence is untestable.

[8] For a statement of the theory of the "triple melting pot," which presents the case for the disappearance of the ethnicity of the white immigrant groups within the wider structure of American religious pluralism (itself compromised by the ecumenical movement and a shared commitment to the "American Way of Life" as a quasi-religious ideal), see Herberg (1955, particularly chap. 2).

[9] The fact that an earlier generation of American sociologists did not regard the assimilation of the American Negro as anything like an immediate prospect and viewed the emergence of a sense of collective unity as an outcome of the Negro's status in American society is apparent in E. B. Reuter's *The American Race Problem* (1927). In chap. 16, Reuter traces the history of, and analyzes the "growth of race con-

An American Dilemma

If Gunnar Myrdal (1944) was critical of the "do-nothing (laissez faire)" presuppositions which he detected in the work of American sociologists (including Park) and the subsequent tendency of the latter to "ignore practically all possibilities of modifying—by conscious effort—the social effects of the natural forces" (p. 1050), his classic opus remained very much within the assimilationist tradition. The author of *An American Dilemma* wrote that "we assume it is to the advantage of American Negroes as individuals and as a group to become assimilated into American culture, to acquire the traits held in esteem by the dominant white Americans" (p. 929).[10]

Myrdal discerns no structural impediment in American society to the realization of an assimilationist program: the race problem is a moral problem "in the heart of the American" (p. xlvii); and "America is free to choose whether the Negro shall remain her liability or become her opportunity" (p. 1022). This decidedly nonsociological approach to the problem is justified, according to Myrdal, because "there is evidently a strong unity in this nation and a basic homogeneity and stability in its valuations. Americans . . . have something in common: a social ethos, a political creed. It is difficult to avoid the judgment that this "American Creed" is the cement in the structure of this great and disparate nation" (p. 1). Furthermore, "the conquering of color caste in America is America's own innermost desire. . . . The main trend in its history is the gradual realization of the American Creed" (p. 1021).[11] The creed is carried, Myrdal believed, by the "huge institutional structures" of the society, through which "a constant pressure is brought to bear on race prejudice, counteracting the natural tendency for it to spread and become more intense. . . . The ideals thereby gain fortifications of power and influence in society. This is a theory of social self-healing that applies to the type of society we call democracy" (p. 80).

Despite his hortatory tone and his call for national planning, social legislation, and social engineering on the part of an enlightened leader-

sciousness," and concludes that "the continued growth of a Negro nationalistic spirit in America is perhaps inevitable" (p. 429).

[10] It is to the credit of Myrdal that he recognized that this assumption was indeed a "value premise" (p. 929) and not the statement of a "natural force" or an "inevitable social process." This distinction frequently is blurred in the sociological literature, as, for example, when Herberg (1955, p. 23) writes that the "perpetuation or ethnic differences is altogether out of line with the logic of American reality." This "logic" would seem to amount to little more than the power of an entrenched social myth.

[11] For a critique of Myrdal's view that the "strain toward consistency" produced by the psychological and moral discomforts of the dilemma is a major motive force in the direction of realization of the American creed, see Medalia (1962).

ship, however, Myrdal had relatively few concrete suggestions for policy with respect to the race problem beyond his faith in the power of concerted educational effort (pp. 48–49) to break down the already-crumbling walls of the "caste beliefs and valuations" which he believed lay at the heart of white racism.[12] The race problem would be solved simply by moving the society further in the course on which it was already set—that of welfare capitalism—which would require no major reorganization of its economic and political institutions. In the process, the South, as the major locus of the racial problem and "itself a minority and a national problem" (p. 1010), would take its place in the mainstream of the American polity.[13]

At the level of social determinants, Myrdal suggested that the forces of modernization in the South—industrialization, urbanization, the spread of literacy—were themselves powerful mechanisms for the elimination of racism in America. This theme frequently recurs in the post-Myrdal writings on race, and is especially emphasized by Arnold Rose (1956, p. 75): "The conditions which led to the development of the caste system in the nineteenth century are no longer with us. . . . New forces have arisen which make the caste system increasingly less desirable and useful to the dominant white group in the South or any other section of the country: These include industrialization, automation, the leadership of the United States in the free Western world, rising educational levels among both whites and Negroes. . . . These changes . . . *have made a mere hollow shell of tradition*" (italics mine).[14]

[12] In his emphasis on beliefs and attitudes, Myrdal's analysis had an affinity with the social psychological interpretation of race relations which has been so pronounced in American social science. Blumer (1958*b*) refers to this interpretation as the "prejudice-discrimination axis" and characterizes it as follows: "It rests on a belief that the nature of relations between racial groups results from the feelings and attitudes which these groups have toward each other. . . It follows that in order to comprehend and solve problems of race relations it is necessary to study and ascertain the nature of prejudice" (p. 420). It is probable that the search for the determinants of prejudice and discrimination in attitudinal sets, personality structure, or role-specific behavior has inhibited the development of a social structural perspective on race relations in American sociology. The work of Lohman and Reitzes (1952, 1954) offered some corrective, but the lead they offered has not been followed.

[13] Ralph Ellison (1966, pp. 298–99) writes that "*An American Dilemma* . . . sponsored by a leading capitalist group . . . is the blueprint for a more effective exploitation of the South's natural, industrial, and human resources. . . . In the positive sense, it is the key to a more democratic and fruitful usage of the South's natural and human resources; and in the negative, it is the plan for a more efficient and subtle manipulation of black and white relations—especially in the South."

[14] Similar statements can be found in Simpson and Yinger (1954, 1958, 1959) and Rose (1965). The hypothesis that urbanization constitutes a major impetus to racial integration and equalization has been challenged on theoretical grounds by Killian and Grigg (1966) and Howard and Brent (1966); Blalock (1959) found little support for it in an analysis of Southern census data and comments that "urbanization in the South has at least in part taken a form which is compatible to that developed in

Hence, the belief that racism is incompatible with the major features of modern social organization has roots which go far deeper than Myrdal's liberal optimism and ethical-philosophical idealism. It is, in fact, rooted in what is perhaps the major theme of modern sociological theory—the shift, in Cooley's terms, from "primary" to "secondary" relations as the basis of social order.

The Sociological Tradition

In the course of their presentation of the case for the inevitability of desegregation, Simpson and Yinger (1959, p. 389) note that "in the approach to desegregation that we are taking, one can perceive a major recurring theme of sociological theory. Here is Sir Henry Maine's idea of the shift from status to contract. Here is an illustration of the perceptiveness of Simmel's work . . . concerning the influence of a money economy. Here is much of Toennies and Weber and Durkheim. Parsons and others who use the structural-functional approach have caught this fundamental orientation in such a way as to make it more readily applicable to such . . problems as the one with which we are concerned."[15]

Thus, it is no surprise that Parsons (1966, p. 739) states that the major theoretical reason for asserting that conditions are ripe in America for the full "inclusion" of the Negro is that "the universalistic norms of the society have applied more and more widely. This has been true of all the main bases of particularistic solidarity, ethnicity, religion, regionalism, state's rights, and class. . . . Today, more than ever before, we are witnessing an acceleration in the emancipation of individuals of all categories from these diffuse particularistic solidarities." Whether phrased in terms of the Parsonian pattern variables, the older formulations of Durkheim, Cooley, or Toennies, or Myrdal's American creed, it is clear that this tradition of sociological theory views ethnicity as a survival of primary, quasi-tribal loyalties, which can have only a dysfunctional place in the achievement-oriented, rationalized, and impersonal social relationships of the modern, industrial-bureaucratic order.

That the tenets of this theoretical tradition necessarily imply the inevitable disappearance of "particularistic solidarities," however, has been put to a major theoretical test in the recent work of Van den Berghe

certain colonial territories. . . . It is . . . entirely possible that as the South continues to urbanize, at least in the early stages . . . non-whites may remain in the most unskilled positions. . . . A constant or even an increasing gap may be maintained" (pp 147–48).

[15] Greeley (1964), a proponent of the view that the ethnic group, which he defines as a "semi-gemeinschaft collectivity" (p. 108), remains a significant element in modern social structure, suggests that the gemeinschaft-gesellschaft tradition poses a "danger that sociologists, impressed with the tremendous increase in gesellschaft, would rule out the possibility of the survival of gemeinschaft, at least beyond the level of the nuclear family" (p. 107).

(1967). Rather than assuming, with the Myrdal-Parsons school, that race relations per se tend to disappear in gesellschaftlike societies, he asserts that they merely shift their form from "paternalistic" to "competitive." In the latter case, there is declining contact between racial castes, segmentation into ghettoes, and economic competition between racial groups. Although Van den Berghe (1967) asserts that racial cleavages in competitive societies "constitute one of the major sources of strain and disequilibrium in such systems" (p. 30), he makes no judgment as to their ultimate disappearance and states that a possible outcome is the "Herrenvolk democracy . . . in which the exercise of power and suffrage is restricted, *de facto* and often *de jure*, to the dominant group" (p. 29).

Van den Berghe's formulation is one of the few attempts in the literature to link the persistence of racial cleavages in competitive modern societies to the essential structure of such societies, and thus represents a major theoretical departure from the tradition discussed in this section It is a departure which permits the description of America as a "socially pluralistic" society along racial lines despite its *cultural* homogeneity (pp. 34–36), which views racial cleavage and conflict as inherent in the nature of competitive society (pp. 30–31) and sees racism[16] as central to, rather than a "hollow shell" within, the Western cultural tradition (pp. 11–18). As such, it provides a perspective for the analysis of racial consciousness and conflict which is lacking in the orthodox Myrdal-Parsons schema.

White Gains and White Resistance

Mounting white resistance, North and South, to the black movement in the sixties forced sociologists to reassess the role of racism in the American social fabric, and, in doing so, they have introduced (or reapplied) concepts which echo Van den Berghe's theoretical analysis. Killian (1968), for example, in *The Impossible Revolution?* writes that "the theme of white supremacy has always been an integral and pervasive feature of the American system" (p. 16)[17] and adds, "it is the challenge to white

[16] Van den Berghe defines racism as "any set of beliefs that organic, genetically transmitted differences are intrinsically associated with the presence or absence of certain socially relevant abilities or characteristics" (p. 11).

[17] Westie (1965, pp. 537–38) also notes that "a wealth of sociological evidence suggests that in many social situations in America, it is not the person who behaves in a prejudiced manner who is deviant, but rather, the non-prejudiced person who refuses to discriminate. . . . People with no dilemma in Myrdal's sense seem to experience another type of dilemma; a conflict between their endorsement of democratic action and yet another normative system, which exists in the majority of American local communities; the system which says that one ought to be prejudiced and ought to discriminate."

dominance that will require the greatest adjustment in the social order and that provides the greatest revolutionary potential" (p. 22). By virtue of his exclusion from a "white man's country" (p. 26), the black, says Killian, is "in the process of becoming an ethnic group" (p. 137), a development which is a radical challenge to the assimilationist ideal in America and which, hence, is fraught with the potential for a revolutionary confrontation.

The notion that specifiable "gains" accrue to whites by virtue of the subordination of blacks was introduced by Dollard (1937) and suggests that white resistance to racial change rests on something more than cultural lag or Myrdalian moral schizophrenia. As such, it is a valuable corrective to the notion that racism is "dysfunctional" or "deviant" within the wider culture. Heer (1959) and Glenn (1963, 1965, 1966) have offered both theoretical and empirical support for this notion, and Glenn writes: "Negro-white antagonism in the United States is and will long remain a matter of realistic conflict. Negroes cannot advance without the loss of traditional white benefits and it is unlikely that most of the whites who benefit . . . will willingly allow Negro advancement. This is not to say that race prejudice and social discrimination are strictly or even largely an expression of economic rationality [1966, p. 178] . . . nor should the many known and possible dysfunctions of discrimination be overlooked. However . . . the tradition of discrimination against Negroes apparently receives continuous reinforcement from the present self-interests of the majority" (1963, pp. 447–48). To the extent, however, that the theory of white gains conceives of white resistance in terms of benefits to individuals, or categories of individuals, it tends to find its place within a social psychological rather than a social structural perspective. Hence, there is not, as yet, a systematic exploration by American sociologists of the possibly latent and positive functions of racism in sustaining the "equilibrium" of the American social system.

Summary

Two perspectives on the features of modern society as they bear on the question of racial assimilation have been presented here. The first, which has occupied the place of a conventional orthodoxy in American sociology since World War II, takes the position that racism is a carry-over from the past which is bound to wither and decay and that, as a consequence, the gradual assimilation of the races can be expected. In the sense that the American creed is viewed as normatively constituent of American society, this perspective suggests a consensus model of racial change and relegates the stresses and strains of the process to a secondary place, as a kind of by-product of inevitable and healthful social trends—the rear-

guard response of a dying tradition. The second perspective suggests that racism is integral in American society, that it is central to the culture and interests of the white majority, and that its breakdown will only occur through a protracted process of social conflict and at least some degree of restructuring of the existing institutional arrangements of the society. The gradual emergence of the elements of such a perspective can be noted in the sociological literature in the sixties, although there is little doubt that the first perspective continues to hold sway as a kind of official orthodoxy within the sociological establishment (see, e.g., Parsons 1966, Hauser 1966*a*, and Pettigrew 1969). An earlier prototype of the second perspective has been present in the Marxian analysis of the race problem.[18]

The affinity of these two perspectives with liberal and radical ideological stances, respectively, on the race problem is apparent (Horton 1966) Our purpose here, however, is neither to claim more abstract-truth value for one or the other (although we believe that the credibility of the first has been seriously put to the test by the racial events of the sixties) nor to condemn both on grounds of their ideological "contamination."[19] Like many sociological theories, these perspectives are schema which serve to point to differing aspects of a complex and probably contradictory reality. What is problematic, we believe, is the overwhelming acceptance, until recently, of the assimilationist perspective among sociologists and the claim that it is supported by social science evidence (Pettigrew 1969) in a way in which the second perspective—which can be referred to as "pluralistic"—is not. In our view, neither the accumulated evidence of social science research nor developments in American race relations in the sixties can support this view. Moreover, the acceptance of the assimilationist perspective has played a large role in shaping the direction of empirical research on race relations[20] and in inhibiting the develop-

[18] For an effective, if neglected, analysis of American race relations in the Marxian tradition, see Cox (1948). As noted above, Marxism failed to supply a corrective to the assimilationist bias of both American social science and American social criticism In fact, the overall impact of Marxian thought has been to relegate ethnicity to the status of "false consciousness"; national and ethnic sensibility is viewed as an outgrowth of the culture of capitalism and as a stratagem of the bourgeoisie for dividing and weakening the working-class movement. For the orthodox Marxist, minorities and minority problems, as such, will disappear with the cessation of class oppression The strengths of the Marxian interpretation of racism lie in its linking of this pattern to the total structure of the society of which it is a part and its insistence that the race problem has determinants in the economic institutions and the struggle for power and privilege in the society. The viable elements of the Marxian perspective can be retained even as the simplistic account of the race problem as a reflex of the class struggle has been, correctly, rejected.

[19] We agree with Horton (1966, p. 713) when he writes that "the error of the sociologist is not that he thinks politically and liberally about his society, but that he is not aware of it."

[20] The main trends of this research prior to the 1960s have been thoroughly summarized in the invaluable papers of Drake (1957) and Blumer (1958*b*).

ment of research efforts pertinent to the last decade. Beyond pointing to the ideologically liberal presuppositions which have permeated this perspective, the further specification of factors which can account for its acceptance is a problem in the sociology of knowledge, which is beyond the scope of this paper.

ARGUMENTS FROM THE NATURE OF AMERICAN MINORITY GROUPS

If sociologists who have favored the assimilation-integration perspective have taken a benign view of the capacity and willingness of American society to achieve racial assimilation, they have also supported their position through a common set of assumptions about American minorities in general and blacks in particular. These assumptions can be stated as follows: American minorities (especially blacks) desire assimilation into mainstream America. As far as the white ethnic immigrant groups are concerned, there have been no insuperable obstacles in either their sociocultural characteristics or their ideologies which have prevented their assimilation; in this respect, their most relevant traits have been those which they shared with lower-class groups in American society as a consequence of their having entered the society at the lower rungs of the class hierarchy. They have shared the majority commitment to the American creed, and the rate of their assimilation is directly proportional to their access to the socializing agencies of the dominant culture. The conventional position on the assimilation of white ethnics was well stated by Warner and Srole (1945, p. 295) when they wrote: "The future of American ethnic groups seems to be quite limited; it is likely that they will be quickly absorbed. When this happens, one of the great epochs of American history will be ended, and another, that of race, will begin" (p. 295).

With the exception of the distinctiveness of his castelike position in the South and his unique visibility, the position of the Negro, it has been believed, is similar. In the words of Kristol (1966), "the Negro today is like the immigrant yesterday," and if his special history and status in American society have subjected him to unusually severe barriers to full participation, his absorption can be expected nonetheless. The remainder of this section will discuss some questions which arise concerning this view of black assimilation in the light of the recent reassessment by social scientists of the assimilation process and the nature of black culture in American society.

The Assimilation of White Ethnic Immigrants

If the assimilation of blacks is predicated on the analogy of their position with that of the white ethnic groups, serious problems arise if the assimilation of the latter has been, in fact, much less extensive than has been commonly supposed. Such is the conclusion of recent analyses of

ethnicity in American society. As early as fifteen years ago, Glazer (1954, p. 172) noted that a kind of ethnic consciousness, part "nostalgia" and part "ideology," was observable among the descendants of immigrant groups, which consciousness performs "some functions, and even valuable functions, in American life." Gordon (1964) distinguishes between structural assimilation (participation in the dominant society at the primary group level) and acculturation (acquisition of the culture of the dominant group). He argues that the latter process has been rapid on the part of minorities in American society, but that the former has not and will remain limited for the foreseeable future (except in the "intellectual subsociety"). In the sense that primary social participation for most people remains limited by ethnic boundaries, the United States, argues Gordon, can be described as structurally pluralistic along ethnic, racial, and religious lines. Glazer and Moynihan (1963) note the differential response and resistance of diverse minorities to Americanizing influences and state that the ethnic group is more than a survival of traditional immigrant culture; it is, they claim, a product of the impact of American life on such culture, a "new social form" (p. 16). They go beyond Gordon in emphasizing the ethnic influence in secondary (occupational, political) as well as primary spheres. Greeley (1969, p. 7) doubts that even the acculturation process has been as thorough as Gordon claims and has called for (1964) a reassessment of the ethnic group as a source of identity, interest-group formation, and subcultural differentiation in American society.

In view of the emphasis placed by these writers on ethnicity in contemporary American society, it is surprising, perhaps, that they have not explicitly addressed themselves to a reassessment of the assimilation-integration perspective as it applies to the black American. If the white minorities have legitimately preserved an ethnic identity, should not the blacks propose to do the same? In this connection, the views of these writers are squarely in the assimilationist tradition. Glazer and Moynihan (1963, p. 52), for example, write that "it is not possible for Negroes to view themselves as other ethnic groups viewed themselves . . . because the Negro is only an American, and nothing else. He has no values and culture to guard and protect." In a similar vein, Gordon (1964, p. 114) writes of the black community that "dual social structures are created solely by the dynamics of prejudice and discrimination rather than being reinforced by ideological commitment of the minority itself." Both these studies, in short, are concerned with the survival or transformation of *prior* ethnic identities in America rather than with the generation of *new* ones, or, in Singer's (1962) terms, "ethnogenesis." Moreover, they fail to raise the question of what the meaning and content of racial assimilation can be in a society which remains ethnically plural. In the words of

Harold Cruse (1967, p. 9), "Although the three main power groups—Protestants, Catholics, and Jews—neither want nor need to become integrated with each other, the existence of a great body of homogenized, inter-assimilated white Americans is the premise for racial integration. Thus, the Negro integrationist runs afoul of reality in pursuit of an illusion, the 'open society'—a false front that hides several doors to several different worlds of hyphenated Americans."

The Problem of Black Culture

If the American Negro has been considered "100 percent American" by sociologists, the divergence of his culture from the middle-class norm has at the same time been heavily examined and documented. The prevailing sociological view was stated by Myrdal (1944, p. 928): "American Negro culture is not something independent of general American culture. It is a distorted development, or a pathological condition of the general American culture." The view that the race problem is a white man's problem here becomes coupled with the view that the black has been unable to create an authentic subculture in America, owing to his oppression and powerlessness, and, hence, that his condition is to be diagnosed as one of a pervasive social pathology.

It is beyond the scope of this paper to review the reassessment of this perspective which is currently under way in the social sciences, but two observations can be made. First, this reassessment, no doubt stimulated by the efforts of black intellectuals (e.g., Ellison 1966; Cruse 1967) to question the "social pathology" interpretation of black culture, has been mainly evident in the work of the so-called urban anthropologists rather than that of sociologists. Their application of ethnographic techniques to the study of the culture of the black ghetto contrasts with the usual practice of sociologists of compiling statistical indexes of social disorganization. Particularly notable in this respect have been the works of Keil (1966) and Hannerz (1969), as well as the theoretical attack mounted by Valentine (1968) on the theory of the "culture of poverty." Recent essays by Blauner (1969) and McCarthy and Yancey (this issue, pp. 648–72) make an overdue shift of sociological attention in this direction. Ellison's (1966, p. 302) comment that "in Negro culture, there is much of value for America as a whole. What is needed are Negroes to take it and create of it the uncreated consciousness of their race" might well serve as a major leitmotiv of this reassessment on the part of both the scholarly and the black communities.

Second, the sociological emphasis on the pathologies of the black community produced a tendency among sociologists in the sixties to view the major barriers to racial integration as residing in the sociocultural char-

acteristics of the black minority itself rather than in the racism of the dominant society. Whether phrased in the form of demographic characteristics (Hauser 1966*b*)[21] or the social disorganization which is believed to spring, in part, from these and, in part, from the "heritage" of prejudice and discrimination (rather than from the current institutional functioning of the society itself), these views have harmonized nicely with the benign orthodox analysis of American society outlined earlier. They have led to considerably less optimistic prognoses for the rapid assimilation of the Negro than were characteristic of the fifties (e.g., Broom and Glenn 1965, pp. 187–91) and have led to charges, especially on the part of black activists, that social scientists were simply providing a new apologia for the racial status quo in America. In any case, the view that black culture contains positive elements that can form the basis of a black ethnic consciousness which can and should be preserved is a challenge of major dimensions to the orthodox sociological image of the black community and black culture in America.

Note on the Caste Hypothesis

Through the work of Dollard (1937), Davis, Gardner, and Gardner (1941), and Warner (1936), the concept of caste became, during the forties, an almost standard tool for the analysis of American race relations. The caste hypothesis acknowledged that the race problem could not be regarded as merely another instance of the minorities problem in the United States, owing to the unique position of the Negro in the overall system of stratification. Moreover, at least in the statement of Warner, the caste hypothesis viewed racial development (especially in the South) as tending toward "parallelism" (Warner 1936, p. 235), or, in Park's terms, a "biracial society." Within the conventional sociological literature, then, there has been available a conceptual framework which was not assimilationist in its premises but which has not been adequate to account for or foresee the racial crisis of the past decade.

Several reasons for the failure of the caste hypothesis in this respect can be noted. First, it described a system of racial accommodation in which the permanent status subordination of the black caste was believed to lie in a system of folkways and mores which both castes accepted as inevitable and unalterable. Hence, it was attacked by both Myrdal (1944) and Cox (1948) for failing to take into account the dynamic forces which were altering the traditional Southern pattern of "race etiquette," for exaggerating the extent of black compliance with this system, and

[21] The hypothesis that there is a direct correlation between economic discrimination and Negro population increase has been put to empirical test by Blalock (1956) and Glenn (1963), whose data do not clearly support it.

for neglecting the role of force and violence in maintaining it. Second, the thesis of a biracial society was incompatible with the liberal-assimilationist ethos and (if only implicitly) was rejected by those sociologists who shared this ethos and feared the possibility—which Warner, in his 1936 statement, neglected—of the interracial conflict which was latent in a structure of caste parallelism. Finally, the caste concept was applied, even by the Warner school, largely to the South; hence it was compatible with the view of the Northern Negro as the "new immigrant" whose problems, in their essentials, were no different from those of the earlier white immigrants whose assimilation was proceeding apace.

An urgent need in the current analysis of American race relations is a conceptual framework which recognizes, as the caste hypothesis does, the unique status of the black in America but which views this status, as the caste hypothesis does not, as a dynamic force with the potential for transforming the black community and black personality in the direction of becoming a major-change agency in American society. Singer's (1962, p. 423) concept of "ethnogenesis . . . the process whereby a people, that is, an ethnic group, comes into existence" remains the major effort along these lines in American sociology.

CONCLUSION

Three major conclusions emerge from this survey of the role of the assimilation-integration perspective in the study of American race relations:

1. The belief that racial assimilation constitutes the only democratic solution to the race problem in the United States should be relinquished by sociologists. Beyond committing them to a value premise which compromises their claim to value neutrality, the assimilationist strategy overlooks the functions which ethnic pluralism may perform in a democratic society. Suggestions as to these functions are found in the writings of Gordon (1964, pp. 239–41), Greeley (1964; 1969, pp. 23–30), and Etzioni (1959, pp. 260–62). The application of this perspective to the racial problem should result in the recognition that the black power and black nationalist movements, to the extent that they aim at the creation of a unified and coherent black community which generates a sense of common peoplehood and interest, are necessarily contrary neither to the experience of other American minorities nor to the interests of black people. The potential for racial divisiveness—and in the extreme case, revolutionary confrontation—which resides in such movements should also be recognized, but the source of this "pathological" potential should be seen as resting primarily within the racism of the wider society rather than in the "extremist" response to it on the part of the victimized minority.

2. To abandon the idea that ethnicity is a dysfunctional survival from a prior stage of social development will make it possible for sociologists to reaffirm that minority-majority relations are in fact group relations (Blumer 1958*a*) and not merely relations between prejudiced and victimized individuals. As such, they are implicated in the struggle for power and privilege in the society, and the theory of collective behavior and political sociology may be more pertinent to understanding them than the theory of social mobility and assimilation. Although general theories of minority-majority relations incorporating notions of power and conflict can be found in the writings of sociologists (e.g., Schermerhorn 1964; Lieberson 1961), it is only recently, in the work of Killian (1968) and Oppenheimer (1969), that such perspectives have found their way into sociologists' analyses of the American racial situation.

3. To abandon the notion that assimilation is a self-completing process will make it possible to study the forces (especially at the level of cultural and social structure) which facilitate or hinder assimilation or, conversely, the forces which generate the sense of ethnic and racial identity even within the homogenizing confines of modern society. On the basis of an assessment of such forces, it is certainly within the province of sociological analysis to point to the possibilities of conscious intervention in the social process (by either the majority or the minority group) to achieve given ends and to weigh the costs and consequences of various policy alternatives. These functions of sociological analysis, however, should be informed by an awareness that *any* form of intervention will take place in a political context—that intervention itself is in fact a political act—and that the likelihood of its success will be conditioned by the configuration of political forces in the society at large. Without this awareness—which is nothing more than an awareness of the total societal context within which a given minority problem has its meaning—sociological analysis runs a very real risk of spinning surrealistic fantasies about a world which is tacitly believed to be the best of all possible worlds. Whether the call of sociologists for racial assimilation in American society as it is currently organized will fall victim to such a judgment remains to be seen.

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Uncle Tom and Mr. Charlie: Metaphysical Pathos in the Study of Racism and Personal Disorganization[1]

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The commonly held hypothesis that Negro Americans are very likely to experience "crisis of identity" and exhibit low self-esteem is questioned. After a brief description of the prevailing view, several major theoretical statements explaining the assumed state of affairs are presented. The third section reviews a variety of empirical evidence revealing considerable ambiguity over, if not directly challenging, currently held assumptions. The concluding section presents a series of alternative perspectives which suggest hypotheses which conflict with those derived from the traditional position.

This essay presents a critical examination of the vast literature concerning the psychological state of the Negro American. The basic hypothesis that Negro Americans are very likely to experience "crisis of identity" and exhibit negative self-esteem will be questioned. After a brief description of the prevailing view of the psychological state of the Negro American, we will review the major theoretical statements explaining the assumed low self-esteem and crisis of identity experienced by black Americans. The third section of the essay reviews empirical research revealing a considerable amount of ambiguity over, if not directly challenging, currently held assumptions. In the concluding section we will present a series of alternative propositions which we will suggest should be considered in light of the ambiguous data presented in section three.

PROVIDING SCIENTIFIC CREDIBILITY FOR A STEREOTYPE

The assumption that the Negro American suffers debilitating effects from the psychological stresses that result from his caste position in American society finds wide support in both the popular and the scholarly literature. Other terms are employed as substitutes for self-esteem and crisis of identity but few authors challenge the thesis. For instance, Kenneth Clark (1965) says: "The effective use of the potential power of

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the Negro masses and the ability of Negro leaders to discipline and mobilize that power for constructive social change may well be determined by the ability of a critical mass of Negroes to control their ambivalence toward themselves and to develop the capacity for genuine and sustained respect for those Negroes who are worthy of confidence and respect" (p. 197). He is clearly comparing what might be with the actual state of affairs. Negro political mobilization is seen as inhibited by ambivalence toward self.

Silberman (1964), in his widely known work, *Crisis in Black and White*, states the position in this manner: "The Negroes' demand for recognition is a crucial part of the struggle to overcome the devastation that the past three hundred fifty years have wrought on Negro personality. The apathy, the aimlessness, the lack of interest in education that characterize the Negro lower classes, and the crisis of identity that afflicts Negroes of all classes, stem from their sense of dependence and powerlessness—their conviction that 'Mr. Charlie' controls everything, Negro leaders included, and that he has the cards stacked so that Negroes can never win" (p. 198).

In *The Negro in America*, Rose (1948) attributes not only problems of self-esteem of the Negro American to majority pressures, but also the totality of the deviation of the black community from middle-class white standards to majority prejudice and discrimination. He says, "The instability of the Negro family, the inadequacy of educational facilities for Negroes, the emotionalism in the Negro church, the insufficiency and unwholesomeness of Negro recreational activity, the excess of Negro sociable organizations, the narrowness of interest of the average Negro, the provincialism of his political thinking, the high Negro crime rate, the cultivation of the arts to the neglect of other fields, superstition, personality difficulties, and other 'characteristic' traits are mainly forms of social ill-health, which, for the most part, are created by caste pressures" (p. 294).

Pettigrew's review of the literature on Negro American psychology reaches similar conclusions. He (1964) writes: "The personality consequences of this situation can be devastating—confusion of self-identity, lowered self-esteem, perception of the world as a hostile place, and serious sex-role conflicts" (p. 25), but cautions that all Negroes in the United States do not respond to the caste situation in the same manner. He outlines three major responses to oppression: moving toward, moving against, and moving away from the oppressor (p. 27). It is revealing that Pettigrew's review of this literature suggests that for each alternative response, psychopathological behavior of one form or another is evident (pp. 27–48).

Few authors challenge this general thesis, though one does encounter

a few tentative challenges. Coles (1964) questions the generalizability of the assumptions when he writes, "Though in no way do I deny what Kardiner and Ovesey have called 'the mark of oppression,' it remains equally true that alongside suffering I have encountered a resilience and an incredible capacity for survival" (p. 348).

Erikson (1966), discussing the application of the concept of identity to race relations, issues less than a strong challenge when he writes:

> Again, the literature abounds in descriptions of how the Negro, instead, found escape into musical or spiritual worlds, or expressed his rebellion in compromises of behavior now viewed as mocking caricatures, such as obstinate meekness, exaggerated child likeness, or superficial submissiveness. And yet, is "the Negro" not often all too summarily and all too exclusively discussed in such a way that his negative identity is defined *only* in terms of his defensive adjustments to the dominant white majority? Do we (and can we) know enough about the relationship of positive and negative elements *within* the Negro personality and *within* the Negro community? This alone would reveal how negative is negative and how positive, positive. [P. 155]

For the most part, however, there is a rather clear consensus: the black man's life and personality are disorganized as a result of white prejudice and discrimination.

In their various attempts to demonstrate the negative consequences of caste victimization, social scientists have, in their description of the Negro American, unwittingly provided scientific credibility for many white-held stereotypes of the Negro. There have been, no doubt, important political and ideological reasons for such a position, and as Rainwater (1966) has noted, social research has attempted to "demonstrate that responsibility for the disadvantages Negroes suffer lies squarely upon the white caste which derives economic, prestige, and psychic benefits from operation of the system" (p. 174).

Indeed, the argument that psychological disabilities result from prejudice and discrimination did play an important part in the evidence presented to the U.S. Supreme Court preceding the 1954 school desegregation decision. It is our contention, however, that such a view has found wide support as much because it complemented political strategy as because it was based upon solid evidence. If the description is a distortion of the social facts, as we argue, then it has probably had the negative consequence of reinforcing the syndrome which it suggests exists.

EXPLANATIONS OF A STEREOTYPE

While there is general agreement about the psychological state of the Negro, there is some underlying debate as to whether the negative self-

esteem of the Negro stems principally from being placed in the role of "Negro," as Pettigrew (1964) emphasizes, or whether it derives principally from the negative evaluation of others that in turn leads to a development of a "Negro role," as Kardiner and Ovesey (1951) suggest. Nevertheless, the broad theoretical perspective developed by Cooley, Mead, and Sullivan has been the major rationale buttressing many of the explanations of lower self-esteem and identity crisis. A third frequently occurring mode of explanation, sometimes difficult to separate from the first two, is that of the interaction of caste and class. We will discuss the three perspectives in order.

The Consequences of Uncle Tom

The application of the first perspective has been relatively straightforward. Since his arrival in the United States, the Negro has been a member of a powerless minority. The powerful white majority demanded that the Negro play the Uncle Tom role, characterized by obsequiousness. At times such a role was necessary for physical survival, and it normally produced more of what little could be gained from the white oppressor. But this behavior was for white consumption only. Among other Negroes another "truer" role was manifest. Such disparate behavior, however, according to this perspective, creates problems resulting in confusion and a crisis of identity. It may also produce self-hatred among some Negroes who attempt unsuccessfully to resist the Uncle Tom role.

Stanley Elkins (1959), in drawing the analogy between the concentration camp and American slavery, presents a clear use of the role-personality perspective. He notes that the expectations of the pervasive and dependent roles of the prisoner and the slave were exacting. Within these narrow boundaries developed the role of the childlike "Sambo" among American slaves which did not exist in Latin America or in Africa. Elkins suggests that while such a role was perhaps difficult for the arriving slaves to learn, before Emancipation the Sambo role was fully institutionalized. With Emancipation the move from "slave" to "accommodating Negro" under Jim Crow apparently was not a difficult transition.

John Dollard's (1937) description of the accommodated Southern Negro is similar to Elkins's description of Sambo. Dollard writes: "If the reader has ever seen Stepin Fetchit in the movies, he can picture this type of character. Fetchit always plays the part of a well-accommodated lower-class Negro, whining, vacillating, shambling, stupid, and moved by very simple cravings" (p. 257). Although Dollard's research was carried out in the 1930s, such a view remains viable. For example,

Pettigrew (1964) notes that "being a Negro in America is less of a racial identity than a necessity to adopt a subordinate social role. The effects of this 'Negro role' are profound and lasting. Evaluating himself by the way others react to him, the Negro may grow into the servile role; in time the person and the role become indistinguishable. The personality consequences of the situation can be devastating—confusion of self-identity, lower self-esteem, perception of the world as a hostile place, and serious sex-role conflicts" (p. 25).[2]

Dollard (1937) takes issue with a simple correspondence between the Negro's role and personality by pointing out that the role the Negro reveals to whites should not be taken as his only or "real" self. The Uncle Tom role is but a facade used to manipulate the oppressor and reveals little of the "true self" of the oppressed (see also Elkins 1959; Odum 1910).

It is problematic whether such an adaptation has positive or negative consequences for personality organization. Bettelheim's (1943) research in concentration camps indicates that in extreme situations there are negative personality consequences. Dollard's (1937) description of the accommodating Negro suggests that accommodation is fraught with dangers for the personalities engaged in it: "Accommodation involves the renunciation of protest or aggression against the undesirable conditions of life, and the organization of the character so that protest does not appear, but acceptance does. It may come to pass in the end that the unwelcomed force is idealized, that one identifies with it and takes it into the personality; it sometimes even happens that what is at first resented and feared is finally loved" (p. 255).

Pettigrew (1964) reasons similarly concerning the effects of maintaining such a dual identity when he says, "Negroes may handle tense interracial situations by attempting to separate their true selves from their role as 'Negro.' Allport points out that this mechanism actually involves a mild dissociation; one is 'himself' with other Negroes but transforms his behavior to meet the expectations of prejudiced whites. Some such dissociation occurs in the acting out of many social roles, but

[2] The straightforward connection between the structural position of Southern Negroes and the role of "accommodating Negro" is, Dollard suggests, more problematic than that suggested by Pettigrew. Even in "Southerntown," where there were relatively few alternatives available for the Negro, Dollard found variation in the degree to which accommodation was accepted. Lower-class Negroes and those with less education, that is, those who had "least access to a divergent conception of the Negro's place in American society," were more likely to accept accommodation (1937, p. 256). Conversely, the more cosmopolitan Negroes—those not limited to white Southerners as a source of identity and esteem—who had been exposed to alternative conceptions of "the Negro" were less likely to accept the role and identity provided by Southern whites.

the intensity of racial role-playing renders this type of dissociation especially dangerous. Carried to extremes, it culminates in mental disorder" (p. 29).

Thus it is suggested that the development of a public facade by the accommodating Negro does not result in a successful separation of self from role, but a confusion over what constitutes self and a lack of understanding and acceptance of self, since he is unable to effectively maintain a dual identity without impairment.

Self-Identity through Interaction

A second perspective, following the emphasis of Kardiner and Ovesey (1951), suggests that the crisis of identity and loss of self-esteem derive largely from the images of himself which the Negro receives from the white community: the self emerges through interaction with significant others. Developing self-identity and self-esteem depends not merely upon objective social characteristics, but also upon the judgment of these characteristics by relevant others.

Again, the application of this theoretical position to the situation of the Negro American has been straightforward. Observers have assumed that Negroes view whites as significant others: the views of whites, who believe in Negro inferiority and act upon such beliefs, directly affect Negro self-identity and self-esteem. "Consciously or unconsciously," writes Pettigrew, "Negroes accept, in part, these assertions of their inferiority" (p. 9). Beyond the subjective evaluations and images held by whites it is also argued that differences in schools, housing, employment, and income are used as criteria for self-evaluation and identity (Proshansky and Newton 1968).

Kardiner and Ovesey (1951) state: "This central problem of Negro adaptation is oriented to discrimination he suffers and the consequences of this discrimination for the self-referential aspects of his social orientation. In simple words, it means that his self-esteem suffers (which is self-referential) because he is constantly receiving an unpleasant image of himself from the behavior of others" (p. 302). They suggest that in order to maintain "internal balance and to protect himself from being overwhelmed by it [the Mark of Oppression] [the Negro] must initiate restitutive maneuvers in order to keep functioning—all quite automatic and unconscious" (p. 303). A major consequence of these defensive measures is the development of a social facade; the Uncle Tom role develops not because the Negro is placed in that role by whites, but rather as an adaptive strategy to protect the self from negative evaluations. In a word, the dual personality of the Negro is seen as a solution

to personality-identity problems rather than a cause as the first perspective suggests.[3]

Rainwater (1966), in a recent analysis of the lower-class Negro family, employs a similar theoretical perspective. Although he suggests a different locus of relevant evaluations, he arrives at similar conclusions. While Clark, Kardiner and Ovesey, and others have argued that the images Negroes receive from white society are the major determinant of low self-esteem, Rainwater suggests that white discrimination and prejudice are but the secondary cause of the Negroes' poor identity formation. A closer examination reveals that Negroes victimize Negroes. He writes: "In short, whites, by their greater power, create situations in which Negroes do the dirty work of caste victimization for them" (p. 175). Further, "at least in the urban North the initial development of racial identity in these terms has very little directly to do with relations with whites" (p. 204).

Rainwater views the family as the major source of identity. Out of the lower-class family, particularly the unstable one, he says, comes a "weak and debased person, who can expect only partial gratification by less than straight-forward means" (p. 206).

It is argued that through the socialization process, as it takes place within the unstable family and the lower-class neighborhood peer group, negative identities develop, since both parents and peers regularly present the individual with derogatory evaluations.[4]

The second perspective, then, stresses negative self-evaluation over "crisis of identity," though both perspectives agree on negative self-evaluation. The perspectives differ with respect to whether the Uncle Tom role is a cause or consequence of the assumed negative self-evaluation.

The Interaction of Caste and Class

While, in general, the literature reviewed here stresses the issues of *caste* over those of socioeconomic class, few authors have ignored the question of the degree to which caste is exacerbated and/or confounded by class (see Dollard 1937; Kardiner and Ovesey 1951; Davis and Dollard 1940; Rohrer and Edmonson 1960; Pettigrew 1964). Here we will review several

[3] Kenneth Clark's thesis in *Dark Ghetto* (1965) is very similar to this position, though it stems from observation of Northern, urban, lower-class Negroes. Clark suggests similar personality consequences resulting from negative evaluation by others.

[4] Rainwater's general thesis need not be limited to black families. Indeed, if it is the unstable family and the hostile world of the slum peer group that provide the significant others who in turn are the sources of such an identity, to the degree that these characterize other lower-class communities similar identities should be developed. In Rainwater's terms, "To a certain extent these same processes operate in white lower-class groups, but added for the Negro is the reality of blackness" (p. 204).

positions which stress the interaction of caste and class factors in explaining the negative self-image presumed to be prevalent in the Negro American community.

The first variant on this theme stresses the role of economic marginality which results from caste victimization. The two consequences of such marginality seen as most important are female-headed families and jobs which lack any measure of prestige, both of which are seen as producing, though by different processes, a negative view of the self.

The relatively high frequency of female-headed families among Negroes, sometimes termed matrifocality, is seen to be perpetuated by the marginal economic position of the Negro adult male. The occupations available to the unskilled Negro man normally lack the security and income necessary to maintain a household. Further, such jobs (as, for example, waiter, cook, orderly, dishwasher, etc.) are seen by some to carry a feminine connotation (Proshansky and Newton 1968). Despite the lack of job opportunities available, the Negro male is still under the general societal prescription that he fulfill his function as provider, so he must work if he is to be evaluated positively as a man and father. The marginal employment situation results in his inability to fulfill his role as male head of household, and is said to result in a serious loss of self-esteem. Proshansky and Newton (1968) summarize much of this literature with the statement that "his predicament may take the form of a 'self-fulfilling prophecy.' He is told that he is 'no good' and 'irresponsible' and to some extent he internalizes these judgments which in turn influence his actions. When he fails, no one is surprised" (p. 205). Erikson (1966), exploring this issue, suggests that, particularly in an industrial setting, such imbalance "may, indeed, become the gravest factor in personality disorganization" (p. 167).[5] Finally, this pattern is said to produce even more dire consequences for his children if the male leaves the household unit. Pettigrew (1964) provides us with a relevant review of research indicating that the specific link between poverty and personality development takes place in the family. These studies suggest that children raised in broken families are more likely to be hedonistic, less accurate in predicting time, less socially responsible, less oriented toward achievement, more prone toward delinquency, and are likely to manifest problems of sex-role identity (pp. 17–19). Thus, the institutional ar-

[5] The traditional literature suggests that Jim Crow was directed more at the Negro male rather than the Negro female. Black women are said to be allowed more freedom, suffer less discrimination, and are provided more opportunities than black men. As a consequence, Negro men are said to have lower self-esteem than Negro women. While this argument has no implications for racial differences in self-esteem among women, the arguments presented earlier hold for females as well as males. Given the cultural prescriptions relating employment to male authority and the male role, one expects to find a similar sexual difference among lower-class whites, that is, underemployed men should have lower self-esteem than their female counterparts.

rangements of slavery and Jim Crow are said to have been replaced by racial and economic marginality that now function as major forces which produce the loss of self-esteem and personality crisis of the adult male and the pathological character of the socialization process in female-headed households.

While the focus upon class factors in this literature normally means attention to the Negro's marginal economic circumstances, Frazier (1957) in his controversial classic, *Black Bourgeoisie,* attends to the peculiar situation of the middle-class Negro, thereby avoiding the implications of economic marginality. Frazier's study is consistent with the general tendency of this literature to characterize the Negro as pathological, no matter what his circumstances, by suggesting that the black bourgeoisie is ambivalent about identification with the "Negro masses" and responds by a flight into a world of "make believe" based upon emulation of the white middle class. "Since the world of make-believe cannot insulate the black bourgeoisie completely from the world of reality, the members of this class exhibit considerable confusion and conflict in their personalities" (p. 25). So Frazier rejects the argument that the marginal economic circumstances of the Negro American are responsible for his personality difficulties. Cultural marginality coupled with the unique situation of economic security among an oppressed people produce similar personality consequences.

SOME EVIDENCE

In this section we bring research evidence to bear upon the traditional arguments and hypotheses, but first several prefatory comments are in order. First, we must ask: very likely compared with whom? If we compare the self-hatred of any social grouping with an ideal personality state—as the neo-Freudians are fond of doing—we can do nothing more than find what we seek—a discrepancy. We hold with Campbell (1957) that any meaningful scientific evidence involves at least one formal comparison, and we do not believe that a comparison between an observed state of affairs and an ideal state of affairs meets the criteria of formal scientific comparison.

Let us very briefly examine some evidence which does not meet our criteria of formal comparison in order to demonstrate the dangers of accepting conclusions based upon such evidence. Kardiner and Ovesey, in their work, *The Mark of Oppression* (1951), draw generalizations concerning the effects of prejudice and discrimination from twenty-five intensive case studies of Negro Americans. The only obvious comparison being made by the authors is between the twenty-five subjects' assessed personality states and some ideal of personality structure. The authors

do, of course, make an informal comparison. Having treated a number of white patients in therapy, a racial comparison is implicit, but it is certainly not systematic. One of the many conclusions drawn from this evidence by the authors is that the social definition of blackness in American society is in some measure responsible for the self-hatred and lack of esteem within this sample. After intensive review of Kardiner and Ovesey's case-study material, Rohrer and Edmonson (1960) conclude that only seven of the cases examined exhibit self-hatred and consequent lack of self-esteem. Further, they note that five of these cases had undergone previous therapeutic experience. Whether or not the self-hatred evidenced by any of the subjects is a result of prejudice and discrimination must also remain in doubt in the absence of a formal comparison.

In addressing the hypothesis of black self-hatred with a formal comparison, a number of possibilities present themselves. One might compare self-hatred among black Americans with self-hatred among black Africans or black Europeans. The literature surveyed above would predict greater prevalence of self-hatred among black North Americans than among black South Americans or Africans, but the possibility also exists that Americans are more prone to self-hatred than Africans (Elkins 1959). The racial comparison within the United States appears most meaningful to us, however, so the following review will attend only to evidence which makes the racial comparison with regard to relevant variables.

We would prefer to have systematic evidence of the type outlined above on self-esteem, self-hatred, and ambiguous identity, but very little exists. Therefore, it becomes necessary to broaden the range of indicators which will be accepted as pertinent to the prevailing literature. We shall also accept anomie, mental disorder, suicide, and alcoholism as indicators of personal disorganization. Acceptance of such indicators involves a number of assumptions which may not be warranted. On the other hand, all appear to represent personal disorganization, and there is evidence that they possess at least some measure of common variance (see Rushing 1968; Vanderpool 1969).

Self-Esteem

There is extensive evidence suggesting that black children become aware of differences in skin color very early in their development. Negro children have been shown to prefer white dolls to brown dolls (Clark and Clark 1958; Goodman 1952) and to assign brown dolls to poorer housing and inferior roles (Radke and Trager 1950). Most of the authors who report this evidence are cautious in interpreting such findings, but reviewers of this literature have been rather free in concluding that this evidence suggests self-doubt, self-hate, and identity problems (see

Berelson and Steiner 1964). It is a rather long jump in our opinion, however, from racial awareness, preference for white dolls, and assignment of inferior roles to brown dolls to self-hatred on the part of such children. There are a number of plausible explanations for such findings which have nothing to do with self-hatred. Personality ratings accompanying one piece of research in this tradition demonstrate that the Negro children were more cheerful, more curious, more inclined toward leadership, kinder, and more sensitive (Goodman 1952)—hardly picturesque of rampant self-hatred. In our opinion the evidence embodied in this literature is open to various interpretations, especially since much of it does not make a racial comparison (see Greenwald and Oppenheim 1968). We do not argue that the interpretation commonly made is necessarily incorrect. It may be correct, but the evidence remains inconclusive.

Is there any evidence which is more directly to the point for black and white children? A series of studies carried out by Baughman and Dahlstrom (1968) provides evidence at variance with the conclusions commonly drawn from the research on Negro and white children. The results of interviews with Negro and white eighth graders in a rural Southern community are worth quoting:

> When we turn to the self-concepts of these children, their interview statements about themselves are markedly positive. This is particularly true for the Negro children, a fact that is at variance with the widely accepted belief that the self-esteem of the Negro is inevitably damaged, even at an early age. The Negro children in our sample, for instance, much more frequently reported themselves as being popular with their peers than the white children did. Also, there was a tendency for more Negro than white children to say that they were *very* satisfied being the kind of person they were. In addition, significantly more Negro than white children described their home life as being happier than that of the average child. Clearly, if the self-concepts of these Negro children have been unduly damaged, this fact is not reflected in their interview statements about themselves, nor in the educational and vocational aspirations which they report for themselves (and which they seem optimistic about realizing). [P. 462]

Further, Morris Rosenberg (1965), summarizing ethnic groups' differences in self-esteem, concludes, "We see that Negroes, who are exposed to the most intense, humiliating, and crippling forms of discrimination in every institutional area, do not have particularly low self-esteem" (p. 57). This finding is particularly noteworthy since the Negroes in Rosenberg's sample represent the lowest socioeconomic status group, but are about average on his measure of self-esteem.

Two other studies which purport to measure self-concept of Negro and white youth based upon national samples of youth of high school age present evidence which is at variance with the traditional conception of racial differences in self-esteem. These studies are both concerned

with academic achievement. The measures of self-concept might better be termed "academic self-concept." Coleman et al. (1966) report that "responses to these questions [concerning academic self-concept] do not indicate differences between Negroes and whites" (p. 281). McDill, Meyers, and Rigsby (1966), examining a matched sample of Negro and white youth of high school age, demonstrate that Negroes display a higher average self-esteem score than the white sample.

Finally Rosenberg reports the use of his self-esteem scale in another context involving the racial comparison with adults. He reports that a colleague "found among attendants [in a mental hospital], who are the lowest ranking nursing personnel, Negroes had higher self-esteem than whites, according to our scale" (p. 63). In interpreting this evidence, he says, "In this middle Atlantic city, the job of attendant is a relatively good job for a Negro but a very poor position for a white. Self-esteem may be more a matter of one's position within one group than the rank of the group in relation to other groups" (p. 63).

It is interesting to note the impact of the traditional argument concerning race and self-esteem when one finds authors uncovering what is apparently negative evidence. Rosenberg is apparently surprised, while McDill et al. (1966) challenge the validity of the measure and resort to intellectual gymnastics in order to reinterpret negative evidence into the traditional argument: "High self-esteem on the part of Negroes is a defense mechanism against discrimination" (chap. 10, p. 16).

Mental Disorder

Much of the evidence addressed to racial differences in the personal pathologies is based upon data gathered by care agencies. Consequently, such evidence can only give us indications of incidence, while the traditional arguments predict differences in prevalence. Furthermore, in light of the systematic work demonstrating differential response with regard to race by the various agencies of the legal system in the United States (Pettigrew 1964), evidence based upon such official reactions to the so-called personal pathologies requires extreme caution.

Pettigrew (1964), in reviewing the state of knowledge on racial differences in mental disorders, concludes that the Negro psychosis incidence rate is higher than the comparable white rate. The only study cited by Pettigrew, however, which takes into account both public and private first admissions, demonstrates that the white incidence rate is higher (Jaco 1960). This suggests caution in the interpretation of data concerning racial differences in incidence rates for psychosis based only upon first admissions to public hospitals. Pettigrew concludes that neurosis incidence rates for first admissions to state hospitals demon-

strate that the white rate is higher than the Negro rate. He admits that both the survey and the admissions evidence support a view that for certain disorders the Negro incidence rate may be lower than the white rate (p. 77).

To avoid accepting incidence rates as indicators of prevalence, we might use sample survey techniques. There are problems, however, with adopting such a research strategy. Relatively few persons exhibit severe mental disorders. A study employing such a strategy, carried out by Pasamanick et al. (1964), attempted to estimate prevalence rates of psychoses, psychoneuroses, and psychophysiologic, autonomic, and visceral disorders based upon clinical evaluations of a subsample of a larger sample of the population of Baltimore. Though Pasamanick and his coinvestigators found that the nonwhite (almost totally Negro) prevalence rate for each of these diagnosed disorders was startlingly below the white rate, the total number of cases upon which the rates were based for all of the disorders was eighty-six. The total number of nonwhites so diagnosed, then, was a small proportion of this number, so the possibility remains strong that such rates are highly unreliable, especially for the nonwhite population.

A final research strategy which attempts to assess prevalence of mental disorder is the use of paper and pencil tests in sample surveys which have been previously validated on normal and diagnosed populations. Dohrenwend (1966), reviewing attempts to assess the prevalence of treated as well as untreated psychological disorders in this manner, reports eight studies which make a racial comparison, though without rigorous socioeconomic status controls. Four of the studies he reviews show higher rates of disorder for whites and four show higher rates of disorder for Negroes. Dohrenwend's own study, carried out in the Washington Heights section of New York City, does not demonstrate differences in psychological disorder between his Negro subsamples and his Jewish and Irish subsamples. With income controlled, the pattern of differences reported by Dohrenwend between his Negro and Irish samples is suggestive, though the differences are not large. For respondents who have a family income of $5,000 a year or less, the Irish respondents are more likely to report symptoms of psychological disorder, while among respondents who have a family income of more than $5,000 a year the Negro respondents are more likely to report such symptoms.

Again it is our opinion that this evidence here suggests rethinking, rather than acceptance, of the traditional arguments on racial differences in personal organization. Again we find attempts by authors investigating racial differences in psychological disorder attempting to explain away what appear to be negative findings. Dohrenwend appeals, though

in rather convincing fashion, to problems of measurement rather than accepting the evidence as he finds it.

Suicide

The nonwhite suicide rate in the United States is consistently far below the comparable white rate (Gibbs 1966; Labovitz 1968). This fact is normally explained as Pettigrew (1964) explains it: "Negro American aggression is more often turned outward in the form of homicide than inward as suicide" (p. 78). Such an explanation, in its most simple form, as stated here, seems no more than a description of a state of affairs once the proponent accepts the assumption that suicide and homicide are different forms of aggression stemming from the same causal conditions (see Henry and Short 1954).

We concede that many would regard including mention of racial differences in suicide rates here as somewhat tenuous, though there are a number of commentators on the etiology of suicide who argue that self-degradation is an important factor in explaining individual suicide (Kilpatrick 1968). Finally, there is some indication that individual suicide is related to a number of the other personal pathologies under discussion here (Rushing 1968).

The differences between the white and the nonwhite suicide rate hold up under sex, age, and socioeconomic status control (*Suicide in the United States*, 1967; Rushing 1968; Labovitz 1968).[6] The pattern of differences with class controlled, however, is suggestive and deserves some note here. Two studies demonstrate that the differences between the white and nonwhite suicide rates are greater at the lower socioeconomic level than they are at the higher socieconomic levels. That is, though affluent nonwhites are less likely than affluent whites to commit suicide, the difference at this socioeconomic level is less than the difference when both groups are poor. For instance, Maris (1969) demonstrates that for Cook County, Illinois, for the years 1959–63, among males, the higher the socioeconomic status level the smaller the difference in suicide rate between whites and nonwhites. Rushing (1969) presents standard mortality rates for suicide for 1950 among males in the United States, and his data show the same pattern.

Alienation and Anomia

Sociologists have developed a large body of empirical work with the concepts of alienation and anomia. This is not the place to engage in a discussion of the distinction between the concepts, but it is fair to say

[6] A recent monograph by Hendin (1969) presents evidence indicating that in New York City the rate of nonwhite suicides is about equal to the white rate.

that, at least empirically, they have been shown to have some overlap and are in practice used somewhat interchangeably. There are a large number of measures which are highly relevant to the comparison we are interested in making here (Nettler 1957).

The evidence making a racial comparison on measures of anomia or alienation remains ambiguous. For instance, Middleton (1963) reports results for a small Florida community which reveal, controlling for years of education completed, that Negroes are more alienated than whites. Killian and Grigg (1962), on the other hand, report data for two southeastern communities, one with a population of 300,000 and one with a population of less than 3,000, which show no differences in anomia for the urban sample and large differences for the rural sample. Killian and Grigg used a composite measure of social position in making the comparisons, and where the differences obtained, Negroes were more likely to be alienated. Kornhauser, Mayer, and Sheppard (1956), in a study of the voting behavior of labor union members in Detroit, had occasion to examine racial differences in anomia. Though the data are not presented for the racial comparison, and no socioeconomic status control is introduced, they report that Negroes have high anomia ratings in just about the same proportion as do the whites. Finally, Brink and Harris (1966, p. 135) conclude, after discussing data from a number of recent national surveys making comparisons between poor blacks and whites, that "the net result is that low-income whites feel quite hopelessly caught up in the forgotten backwash of society." This evidence certainly casts some doubt upon the traditional assumptions with regard to racial differences in alienation.[7]

Alcoholism

Let us conclude our brief review of evidence concerning racial differences in the so-called personal pathologies with a brief mention of alcoholism. In an excellent review of the available work concerning such differences, Sterne (1967) concludes that the evidence reveals a higher rate of alcoholism among Negroes than among whites. As with mental illness rates, however, the bulk of this empirical work is based upon subjects who have come to the attention of care agencies, and Sterne shows that data drawn from official agencies are not altogether unanimous in demonstrating higher rates for Negroes. On the other hand, death rates from cirrhosis of the liver are much higher for whites (Rushing 1969). Again, this evidence lacks consistency with respect to a conclusion concerning the racial comparison.

[7] This research makes premature such exchanges as that between Coleman (1964) and Gordon (1965) based upon assumed racial differences in alienation.

Finally, Rushing's (1969) data on alcoholism show that, with occupation controlled, the smallest differences between white and nonwhite males occur among the professional and managerial groups, while the white rate far exceeds the nonwhite rate in the lower prestige occupational categories.

Though we have ranged beyond direct measures of self-esteem, we believe that the evidence reviewed is pertinent to the central hypotheses of the traditional literature. It seems obvious to us that the evidence is highly ambiguous. Both defenders and attackers of the traditional view of the personal disorganization of the Negro American can find support in this body of evidence. The evidence is generally of less than desirable quality, which allows a proponent to dismiss negative evidence on methodological grounds in many instances.

DERIVING SOME ALTERNATIVE HYPOTHESES

Since we are convinced that at best the traditional view is only partially supported by the existing evidence, and further that the effects of the black experience in its present and historical forms are far more complicated than has normally been assumed, we offer several counterhypotheses here. We feel that such an exercise is useful in that it suggests crucial tests: such counterhypotheses require for their dismissal evidence which more clearly supports the traditional hypotheses.

Following the work of Morris Rosenberg (1965) and Stanley Coopersmith (1967), we will view self-esteem as an evaluative attitude toward the self.

Coopersmith (1967) suggests that relative evaluations are important antecedents or determinants of self-esteem. He notes, in his summary of prior theoretical statements concerning self-esteem, four principal factors: "(1) The amount of *respectful, accepting and concerned treatment* that the individual receives from significant others in his life. (2) Our *history of successes* and the status and position we hold in the world. (3) Experiences are interpreted and modified in accord with the individual's *values and aspirations*. (4) The individual's *manner of responding to devaluation*" (p. 37). We suggest that these factors are the very assumptions employed by those authors reviewed in the second section of this paper. Indeed, it is Mead, Cooley, and Sullivan, among others, whom Coopersmith is summarizing (pp. 29-36). We propose such factors here as guidelines, as we discuss the position of the Negro in the United States. So, as is evident, we do not propose adopting a radically different theoretical approach to these issues. We will suggest that with only minor alterations such factors produce conflicting hypotheses concerning the self-esteem of the Negro American.

Respectful Treatment

The literature on Negro self-esteem has for the most part followed Kardiner and Ovesey's assumption that Negroes accept white definitions of themselves.

In contrast to this assumption, research by social psychologists indicates rather clearly that the sources of evaluation important for self-identity are individuals occupying social positions quite similar to ego (Pettigrew 1967). This suggests that Negroes, rather than using whites, would be most likely to use other Negroes as sources of identity and esteem, for a number of reasons; the reality of de facto segregation being one of the most important.[8] Rainwater's (1966) research on lower-class Negroes complements the social psychological literature in his suggestion that it is the family and peer group that are the principal sources of self-identity. He suggests that it is the broken family and the expressive system of the corner peer group that are the principal causes of low self-esteem and crises of identity. He goes on to suggest that, except for the negative definition of black skin, the same processes of identity formation should take place among lower-class whites who are in similar social and economic positions. Disregarding the definition of black skin, and assuming different sources of relevant evaluation, the application of the self-through-interaction thesis leads to a different conclusion concerning the self-esteem of black Americans.

Therefore, *to the degree that Negroes do not use biased white evaluators in developing a self-evaluation, the process of development of self-identity within the black community will parallel the developmental process in the*

[8] We have phrased the traditional arguments and our own in group terms. We have spoken and will speak of Negroes and whites, and have attended to evidence in the form of relevant group rates. We do not mean to imply that all Negroes, or whites for that matter, find themselves in similar social circumstances or respond to the same circumstances in exactly the same manner. We recognize, in fact we insist, that the variables under discussion *are* variables. Consequently, when we make the statement that Negroes are highly likely to use the evaluations of other Negroes as sources of identity and self-esteem, we would expect a great deal of variation here within the Negro subgroup depending upon the constellation of other variables such as region, class, relative size of Negro and white population within a geographic area, and the like. Consequently, we would predict very different sources of evaluation and consequences for self-esteem for the Negro living in a small North Dakota town working as a store clerk and his counterpart in Harlem. The same would be true for the black high school teacher, educated at a state university in the Northeast and teaching in the Northeast compared with the black individual educated at a predominantly black state university in the South and teaching at a predominantly black high school in the rural deep South. After comparing such group rates, of course, the burden of such an explanation rests upon demonstrating within group differences as the hypothesis, with respect to social group rates, is certainly consistent with a number of other explanations. While not denying within-group or between-community differences, we stress racial-group differences here in response to the phrasing of traditional arguments.

white community, and to that degree, when social class is controlled, *Negroes and whites should not differ in levels of self-esteem.*[9]

Success and Values

Coopersmith (1967) notes that self-evaluations stemming from one's experiences are judged as successes or failures depending on one's values and aspirations (p. 37). Consequently we cannot infer self-evaluation directly from an objective reading of success and failure; we must put such a history into a context of values and aspirations. This point only becomes relevant when it is not assumed that the American cultural structure can be characterized by one dominant set of values about which there is a high degree of consensus.

One can make a distinction between a group of authors who argue that American society is characterized by a set of common values and a second group who stress distinct subcultural value systems.

The first group of writers has assumed that society is integrated by a common system of values and that all members are more or less aware of and committed to these values. Parsons (1953), for example, assumes that a common value system underlies the system of stratification. He writes: "Stratification *in its valuation aspect*, then, is the ranking of units in a social system in accordance with the standards of the common value system" (p. 93). Merton's (1957) statement on anomie articulates this position with its assumption that most Americans are aware of and committed to a value system epitomized in the American Dream. Such a perspective allows one to make direct inferences regarding self-evaluation from an individual's objective successes and failures.

The second group of theorists has assumed that American society is composed of a number of autonomous and conflicting subcultures. Perhaps the strongest statement of this position was made by Miller (1958) who wrote concerning lower-class culture: "There is a substantial segment of present-day American society whose way of life, values, and characteristic patterns of behavior are the product of a distinctive cultural system which might be termed 'lower class' " (see also Davis 1946; Lewis 1961; Becker 1963). This perspective allows one to argue that the distinct values developed within the lower class can provide alternative criteria for success and contribute to positive self-evaluation, hence blunting middle-class definitions of failure and evaluations of such failure.

It should also be noted that the literature we have been questioning has assumed that the conflict which has characterized the relationship between white and black Americans has resulted in disorganization and

[9] The degree to which blacks employ whites as significant others ought to vary directly with informal contact with whites. Though such contacts may be selective, it might be hypothesized that variation in contact is negatively related to self-esteem.

disintegration within the Negro community (Coser 1956; Williams 1947). We suggest, following the arguments of Lewin (1948), Myrdal (1944, pp. 1766–67), and more recently Himes (1966), that, on the contrary, racial conflict and isolation have resulted in a measure of cohesion and solidarity among Negro Americans. If conflict has had such consequences, then it should function to sharpen variant value systems. There is some evidence indicating that Negroes generally, and especially working- and lower-class Negroes, have developed life-styles that reflect relatively autonomous and cohesive subcultures (Keil 1966; Billingsley 1968; Valentine 1968; Hannerez 1969).

Following those who suggest that class is the crucial variable necessary to isolate such value subcultures, one would predict that the lower class would be least likely to accept the dominant definitions of success and worthiness. Recognizing the effects of racial conflict, however, suggests that lower-class whites should be more vulnerable to dominant definitions than lower-class blacks (see Dahrendorf 1959, pp. 189–93). Middle-class blacks should be more likely than lower-class blacks to accept the dominant value system. Following this line of reasoning, we suggest that middle-class whites should be most highly committed to the dominant value system and lower-class blacks should be least committed. We would suggest, then, that the possibilities for variant value subcultures would be greatest among the black lower class[10] and smallest among the white middle class, with the white lower class and the black middle class falling somewhere between the two extremes.

If, in fact, success and failure are translated into self-evaluation within a context of values and aspirations, and variant subcultures provide alternative criteria of success and failure, then there are avenues to credible and high self-esteem that do not depend upon the dominant value configuration. *Lower-class blacks will manifest higher self-esteem than lower-class whites, and middle-class blacks will manifest lower self-esteem than middle-class whites.*

[10] Though we are led to make this argument on theoretical grounds, we are somewhat skeptical of it on empirical grounds. The research on educational aspirations of black and white youth indicates that black adolescents are at least as likely and probably more likely to accept dominant definitions of educational success (see Proshansky and Newton 1968, pp. 196–202). On the other hand, viewing the above argument in developmental terms may mean that this evidence does not contradict the position. We have neglected to confront the developmental aspects of self-evaluation in discussing racial differences here. In so doing, we do not mean to imply that we do not recognize the crucial importance of such aspects in developing an explanation of racial differences in self-evaluation. The traditional literature, under review, stresses the factors affecting adult self-evaluation; so, too, have we. The more theoretical work on self-esteem, though, stresses the early adolescent period, suggesting development of a stable self-evaluation during this period. These two emphases conflict in their interpretation of the implications of the educational aspiration data for social differences in adult self-evaluation.

Responses to Evaluation

The subcultural explanation comes close to implying that members of subcultures are neither influenced by nor aspire to the values of the dominant culture. Recent literature describing the poor suggests that the required structural autonomy for the development of an autonomous subculture does not exist in an industrial-urban society. That is to say, it is unlikely for a group of people, no matter how limited their resources, to be totally unaware of and unaffected by the larger community.[11] By this view, both the black poor and the white poor encounter the criteria of worth expressed by more affluent Americans. Rather than asking how such negative evaluations harm individuals who are subject to them, we ask how one defends himself in the face of them.

Here we are following Merton (1957), who asks, "When are relatively slim life-chances taken by men as a normal and expectable state of affairs which they attribute to their own personal inadequacies and when are they seen as the result of an arbitrary social system of mobility, in which rewards are not proportioned to ability?" (p. 240).

Cloward and Ohlin (1960) argue that persons who ascribe their failure to the social system attack the system and become alienated from it to some degree. "The individual who locates the source of his failure in his own inadequacy, on the other hand, feels pressure to change himself rather than the system. Suffering from a loss of self-esteem, he must either develop mechanisms that will protect him from these feelings of personal inadequacy or work toward eliminating them by developing greater personal competence. By implication, then, attributing failure to one's own faults reveals an attitude supporting the legitimacy of the existing norms" (p. 112). One response to failure results in negative self-evaluation or low self-esteem; the second results in a withdrawal of loyalty from conventional structures and has no apparent affect on self-esteem.[12] Under what structural conditions are persons who fail likely to respond to such failure by blaming the system rather than themselves? Cloward and Ohlin suggest two conditions: (1) When there is a "discrepancy between institutionally induced expectations (as distinct from aspirations) and possibility of achievement, which produces a sense of unjust deprivation." (2) When there are "highly visible barriers to the achievement of aspirations, which give rise to feelings of discrimination" (p. 113).

The position of the lower- and working-class Negro in America is ob-

[11] There may be some exceptions to this position for the United States as reflected in *communities in isolated Appalachian areas.*

[12] See Elton Jackson's (1962) *interpretation of his data on status inconsistency,* symptoms of stress, and political attitudes for a complementary position.

viously characterized by these conditions. Thus Myrdal (1944) noted several decades ago: "The standard explanation of Negro failures, and the only one publicly accepted, is to place the responsibility upon the caste system and whites who uphold it. . . . As the Negro protest is rising and is becoming popularized, the view becomes more and more widespread that white oppression and caste deprivation are to be blamed and not Negro inferiority" (p. 759). Traditionally, white prejudice and discrimination have been quite open and have become more subtle as the articulation of the system-blame position has become more widespread. On the other hand, lower-class whites possess a far less well-articulated view with which to reinterpret negative evaluations, and barriers to success for lower-class whites are less visible. Poor white reaction to governmental efforts made in response to black protest may be the beginnings of such a coherent view, however (see Brink and Harris 1966). The implications of such a view for self-evaluation of the individual black man are made explicit by Myrdal (1944), when he says, "It preserves self-respect and does not necessarily damage ambition" (p. 759).

The system-blame reinterpretation of failure and negative evaluation should not be as likely an option for the middle-class black, however. In spite of discrimination he has achieved some measure of success within the dominant value framework. Acceptance of the system-blame perspective should be more difficult since it suggests that he could not be successful if it held (see Rytina, Form, and Pease 1970). Consequently, we suggest that the system-blame explanation does not function as well in defending middle-class blacks from negative evaluation. We are again led to the proposition that *lower class blacks should exhibit higher self-esteem than lower-class whites, but middle-class blacks should exhibit lower self-esteem than middle-class whites.*

In this section we have developed three theoretical perspectives in contrast to the traditional view. As we have stated above, the burden of these views rests upon the explanation of within-group differences, as a number of arguments presented result in similar predictions of racial differences by class level. Given the ambiguity of the evidence reviewed, we believe that each of these perspectives ought to be subjected to empirical test.

POLICY IMPLICATIONS

Let us conclude by discussing for a moment the possible political implications of the alternative perspectives we have outlined above, since, we believe, political implications have always been relevant to the emphases in this literature. Both segregationists and black militants may find solace in these perspectives, which can be stated to support either

ideological position. The segregationist might say, "You see, segregation is good for them," implying that there are also positive consequences of segregation. The black militant will, no doubt, appreciate our analysis of the traditional literature as at best stereotyped, and commend our suggestion that poor blacks respond with strength to oppression.

In either case, the public policy implication of the alternative views of Negro self-esteem presented here stands in sharp contrast to the traditional hypotheses of Negro self-hatred and pathology. Valentine (1968) argues strongly and quite convincingly that academic poverty experts and liberal intellectuals in general view the cultural adaptations of the poor, especially the Negro poor, as pathological. The adaptations which the poor make to their circumstances are viewed from a middle-class perspective, which easily leads to characterization of these adaptations as unhealthy, destructive of human potential, and physically damaging (see also Rodman 1964). The political thrust of such "race" research, then, combined with what appears to be a rather consistent view of the poor as pathological, may account for the plausibility of the standard view of Negro self-hatred. It has been politically acceptable to denigrate the poor, especially the Negro poor, if the burden has been placed upon the white majority for the hypothesized state of affairs.

Yet, as the controversy surrounding the "Moynihan Report" clearly indicates, a description that suggests Negroes, or the poor in general, are pathological, even though plausible given the social and economic constraints under which they live, implicitly suggests that the problems that characterize these groups may be attacked, not only on the institutional level, but also on the individual and family level. Martin Luther King (1967), commenting on the pathologies normally associated with the Negro family, identifies the political ambiguities inherent in the traditional position. He writes: "As public awareness increases there will be dangers and opportunities. The opportunities will be to deal fully rather than haphazardly with the problem as a whole—to see it as a social catastrophe and to meet it as other disasters are met with an adequacy of resources. The dangers will be that the problem will be attributed to innate Negro weaknesses and used to justify neglect and rationalize oppression" (p. 404).

If empirical evidence supports an alternative description and explanation of racial differences in self-esteem, then institutional change rather than individual psychiatric or welfare services should be the primary focus of public policy aimed at amelioration of the consequences of racism.

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Intergroup Attitudes and Social Ascent among Negro Boys[1]

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Over the years two conflicting appeals have been directed toward black youth: the achievement of racial equality through integration on the one hand, and black power or solidarity on the other. The first is consistent with an approach to social change that views personal achievement in terms of the individual's performance within a context providing opportunity; racial change is thus reflected in the aggregated accomplishments of individual Negroes. In the nationalist appeal, self-improvement is linked to group achievement through consciousness of white oppression, and occurs by means of dedicated involvement in a collective struggle. Though support for each cause is commonly assumed to be negatively related, no correlation was obtained in a high school sample of Negro boys. Cross-tabulation of attitudes toward black solidarity and racial integration generated four attitude groups: support for only integration (integrationist) or black solidarity (nationalist), and endorsement of both causes (pluralist) or neither (uncommitted). With some exceptions, hypothesized between-group differences were obtained on racial attitudes and experience, differential life opportunity, and individual competence.

A valued belief in the American experience defines the good life as a reward achieved by moral discipline, hard work, and ambition. The efficacy of this formula in status mobility is contingent on access to favorable life opportunities and on the evaluation of performance by universalistic-achievement standards. Racial subordination violates both of these conditions, and places individual ascent in a contingent relationship to group advancement. Through heightened race pride, sensitivity to white oppression, and awareness of the individual-group relationship, the black liberation movement has tended to increase the psychological validity of social ascent through ingroup commitment.

The individualist and collective modes of social ascent are incorporated within two contrasting approaches to social change: an emphasis on individual achievement as expressed in Weber's Protestant Ethic and McClelland's achievement motive and the revolutionary-collec-

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tivist approach outlined by Sorel and others.[2] Achievement theory stresses the development of motivation to excel through family socialization, freedom from binding group obligations or ties, and a willingness to take advantage of opportunities in areas away from home. Applied to majority-minority relations, this approach would view racial change as a consequence of the aggregated achievements of individual Negroes.

Revolutionary-collectivist theory, on the other hand, sets forth the rationale for commitment to a collectivity, a belief that the deprived, apathetic masses can only achieve a better life through involvement in a collective, revolutionary struggle. Participation in the movement is the primary agent of personal change. Thus psychological change among participants in the black liberation movement—toward a greater sense of a racial pride and efficacy—would constitute a major accomplishment in its own right and an important prerequisite for Negroes to achieve their goals. While both theories view the disciplined effort of individuals as an essential determinant of change, revolutionary theory joins this quality with subordination of self to a collective cause and authority. "It emphasizes selflessness, the strength in unity, the necessity to 'stand together or fall separately,' the enormous power that a single-minded body exhibits" (Coleman 1969, p. 296).

Two historically dominant strategies for racial change are posed by the achievement and revolutionary approaches: the attainment of racial equality through integration, as advocated by civil rights organizations, and the black nationalist strategy—mobilization of black people for the development of their economic resources, collective identity, and political power.[3] Cruse observes that "American Negro history is basically a history of the conflict between integrationist and nationalist forces in politics, economics, and culture—between freedom and racial equality, on the one hand, and self-help, group solidarity, economic nationalism, and separatism, on the other" (1967, p. 564).

The integrationists have struggled to achieve a social situation wherein

[2] These two approaches are compared by James Coleman in a provocative essay on race relations and social change (1969). This paragraph and the next are heavily indebted to this source.

[3] Despite much confusion regarding the aims and strategies of black power, the ideal of equality in pluralism and the following points have received moderate agreement. The movement aims to eliminate through collective means all forms of racial subordination or discrimination, in contrast to more restricted, reform objectives. Its basic strategy rests on the premise that black men must act in their own behalf in all institutional domains—stress is placed on economic, political, and cultural nationalism. Black solidarity and identity are promoted by developing a collective consciousness of racial oppression and by fostering self-discipline and self-respect through an understanding of the black man's historical, contemporary, and international experience. For a more detailed discussion of these points, see Carmichael and Hamilton (1967), Killian (1968), and Franklin (1969).

the life chances of the individual Negro are relatively independent from those of other members of the black community. The route to racial equality is charted through the accumulated achievements of individual Negroes. Throughout recent history this appeal has been made by Negro leaders from the upper strata, and the benefits of this approach have been greatest for this population. If integration weakens racial ties, some evidence suggests that desegregated schooling does increase the life chances of black children for educational and occupational attainment by fostering school success, interracial trust, and access to good jobs (Crain 1970). Accordingly, we assumed that commitment to racial integration and individualistic achievement would arise among black adolescents who view the social system as supportive of individual mobility through individual performance, who have acquired a sense of interracial trust through white friends, and who are relatively high on status origin, intellectual ability, and desire to achieve.

Whether committed to racial separation or not, nationalist organizations have devoted their main efforts to the cultural and communal development of black people, especially in the lower classes where there is little chance of, or interest in, meeting the prerequisites of racial integration. From the movement's beginnings to the present, various expressions of black nationalism have claimed that meaningful integration of the black man cannot be achieved by disavowing his racial group or from a position of inequality. The belief that black solidarity and racial equality can and should be achieved before energies are directed toward the attainment of racial integration is expressed in the rhetoric and programs of black power advocates. This position is well expressed by Ron Karenga, a militant leader of cultural nationalism from the Watts area of Los Angeles: "We're not for isolation but interdependence —but we can't become interdependent unless we have something to offer." Likewise, Nathan Wright concludes that "there can be no meaningful integration between unequals."[4]

Traditionally, black nationalism has acquired its support from young Negroes in the lower classes, a setting where individual life chances are most closely related to the relative group position of black people. Accordingly, commitment to this cause and to ascent through the status change of all Negroes should be most characteristic of adolescents who are keenly aware of the disjuncture between hopes and expected accomplishments. Anticipated failure in status achievement is attributed to an external barrier, white oppression, rather than to the self, as seems probable among individualistic youth, and their relations to white authority figures are likely to be conflicted. This view of the system—

[4] The statements by Karenga and Wright are on pp. 164 and 116 in Barbour's *The Black Power Revolt* (1968).

unfavorable status prospects and white oppression—may stem from distrust or hostility associated with racial isolation and from "socially imposed" handicaps, such as low-status origin and reward deprivation in school.

In comparisons of the integrationist and nationalist approaches to racial change, it is commonly assumed that support for one implies opposition to the other. Negro movements have tended to embrace one or the other strategy, but other alternatives are available on the social-psychological level. The position of Negro youth relative to racial integration and the black community involves more than simply approach, avoidance, or aggressive responses to a particular group. Commitment to a cause does not clearly define one's relation to others. Outgroup hostility, for instance, is not an inevitable correlate of ingroup identification. At minimum, decisions regarding one's relation to racial integration and the black community could result in one of four intergroup orientations: *uncommitted*—indifference toward the collective interests of black people and racial integration; *nationalist*—affirmation of only the collective interests of the black community; *integrationist*—support for only racial integration; and *pluralist*—support for both racial interests and integration.[5] Our aim in this study is to identify these four intergroup orientations from attitudes toward racial integration and black solidarity in a sample of Negro boys of high school age, and to compare boys in each orientation group on selected social and psychological variables. These variables are grouped under interracial experience, life opportunity, and competence.

An ideological bridge between black solidarity and integration is provided by the pluralists, who favor both strategies. The differing views of the nationalists and pluralists on racial integration imply that racial isolation and separatist feeling would be concentrated among the former. A desire to become part of an interracial community requires

[5] These perspectives are similar to three of the four minority-group orientations outlined by Louis Wirth in a sequential model based mainly on the experiences of European religious and ethnic groups: an initial pluralistic attitude is followed by assimilationist, secessionist, and militant strategy (1945; cf. Johnson 1966). Tolerance from the dominant group, as well as social and economic equality, is sought by a pluralistic minority in the belief that differing cultures can flourish harmoniously in the same society. Adequate subgroup differentiation in society to ensure perpetuation of the ethnic tradition and autonomy is the central goal of this minority. Desegregation which allows intergroup contact in secondary settings establishes social bonds and forces that eventually weaken communality and strengthen assimilationist sentiment. Slavery excluded equality in cultural pluralism as an initial alternative for black Americans, while assimilation was not an option for the masses. Revitalization of cultural individuality and pride in secessionist or separatist movements can be viewed as a response to the above conditions and their psychic costs. The militant orientation in Wirth's typology, which aspires to dominance over groups, is expressed by some nationalist groups, for example, as in the belief that black people will soon rule the world.

faith in the opportunity to do so, and thus we expected perceived racial barriers to individual achievement to be less prevalent among the pluralists than the nationalists. Such faith is nurtured by adequate family resources, individual competence, and rewarding experience with adult (predominantly white) authorities.

Support for racial integration implies confidence in one's ability and belief in a black person's chances in a predominantly white society, while effort toward the development of the black community is contingent on a willingness to cooperate with other Negroes. In the absence of these conditions, one might expect to find a noncommittal, survival ethic of individualism, such as that expressed by a nineteen-year-old boy in Harlem. When asked by a youth worker why he "didn't know" about conditions in his area, he replied: "As long as I can survive, I don't care about nobody else, man" (Clark 1965, p. 15). Compared with youth having other intergroup attitudes, we expected the uncommitted to be lowest on intelligence and sense of mastery, and most dependent on their family of orientation.

In summary, conditions which promote individualistic-achievement striving are also viewed as predictive of integrationist sentiment. Since individualism is nurtured by trust and the belief that rewards can be achieved by the self, we assumed that the integrationists would have greater interracial experience and be less handicapped by environmental and personal limitations to achievement than boys in the other groups. Racially linked barriers to this form of social ascent increase the importance of race for achievement, and the more the individual's future is linked to his racial group, the greater the likelihood of nationalistic sentiment among relatively competent boys (cf. Cloward and Ohlin 1960, p. 125). The nationalists are likely to differ from other youth on isolation from whites—social and emotional—and on degree of conflict with white authorities in school and community. Though race conscious, we assumed that the pluralists would have more rewarding interracial experiences and perceive greater opportunities than the nationalists. Last, an incompetent self—defined by low intelligence, fatalism, and family dependency—is viewed as the primary distinguishing attribute of the uncommitted.

THE SETTING AND SAMPLE

The Negro boys included in the study were of high school age and were drawn from a 1965 survey of approximately 4,000 students in the secondary schools of Richmond, California.[6] The city's current racial

[6] Approximately 17,000 students enrolled during the spring of 1965 in the eleven junior and senior high schools in Western Contra Costa County represent the population from which the sample was drawn. This population was stratified by race, sex, school,

composition is primarily a consequence of a large influx of Southern Negroes during World War II. The proportion of Negro residents increased from 1 percent in 1940 to 16 percent in 1950; approximately 30 percent of the city's residents were Negro in 1960. Most of the Negro population is concentrated in the western and southern flatlands of the city. Negro students comprise less than 11 percent of the students in two of the five high schools; no high school was more than half Negro. Numerous racial disturbances have occurred in the city since 1965, the most serious of which was two consecutive nights of rioting during the summer of 1968.

Most of the Negro parents are Southern born and low in socioeconomic status. Three-fourths were born in the South, and most spent part of their childhood in rural areas of this region. Twenty percent of the Negro adolescents were also born in the South. Compared with the white students, Negro youth were more likely to come from father-absent families (22 vs. 9.5 percent), and their fathers were generally employed in unskilled jobs, in contrast to a fourth of the white fathers.

Our first step in the analysis involves construction of the intergroup typology and a test of its construct validity on racial and interracial attitudes. This is followed by a comparison of the groups on measures indicating life opportunity (objective and perceived) and competence—family and personal resources, relations with white authorities, and views of the future in terms of anticipated barriers and status prospects.

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and grade level. In order to obtain sufficient Negro students and boys for the analysis, disproportionate random samples were drawn within each race and sex substratum 85 percent of the Negro boys; 60 percent of the Negro girls; 30 percent of the non-Negro boys; and 12 percent of the non-Negro girls. This procedure produced a stratified probability sample of 5,545 students. Completed questionnaires were obtained from approximately three-fourths of the students in the probability sample. Teachers administered the questionnaire in three parts, each of which took approximately fifty minutes; in most of the schools the sections were administered on three consecutive days. The sources of sample attrition included an inability to obtain parental permission (12 percent), absenteeism (7 percent), students who had transferred or dropped out even though listed on the roster (6 percent), and unusable answer sheets (1 percent). An analysis of sample bias resulting from this attrition disclosed small but consistent differences between the students who completed the questionnaire and those who did not; the former were slightly better students than the latter. When the proportion of the population in each substratum—race-sex categories by grade and school—is identical, sample statistics are direct unbiased estimates of population parameters. To achieve this end, the proportion responding in each of the four race-sex categories was calculated. Cases were then randomly duplicated in those substrata whose response rate dropped below that of their race-sex category and randomly discarded from those substrata whose rate exceeded that for the race-sex category. In the entire sample, only 193 cases were deleted and 171 randomly added. For the purposes of our analysis, a small number of Mexican-American and Oriental respondents were deleted from the sample.

THE INTERGROUP TYPOLOGY AND ITS CONSTRUCT VALIDITY

The proposed typology is based on the assumption that sentiment favoring the collective interests of the black community is relatively independent of attitudes toward racial integration. To test this assumption we constructed indices of both attitudes from items in the survey.

On black solidarity, the boys were presented with a list of strategies that have been proposed by some Negro groups to reach their goals and were asked how strongly they felt about each of them. Three of the strategies represent core principles of black power—black unity, power, and self-defense—and boys who approved of one were also likely to approve of the others.[7] Approximately three out of five boys approved of each strategy.

Another tactic, exclusion of whites from the movement, has been stressed by some black-power advocates as necessary to ensure the development of black leadership. In support of this policy, Carmichael and Hamilton cite the experience of a white civil rights worker who observed that "too often we have found our relationships with the local community leaders disturbingly like the traditional white-black relationship of the Deep South" (1967, pp. 28–29). In our sample of Negro boys, the exclusion of whites from black organizations received very little support (only 12 percent), and this support was unrelated to approval of black solidarity as measured by the three-item index. In this respect at least, separatism is not reflected by sentiment favoring black solidarity.

A more direct test of the intergroup alternatives associated with variations in attitude toward black solidarity is provided by an index of integration sentiment constructed from two interrelated items on the preferred racial composition of schools and neighborhoods.[8] Seventy percent of the boys strongly agreed that students of all races should attend school together and a third preferred to live in an integrated neighborhood. In line with our assumption regarding intergroup attitudes, these youth did not differ from boys who were against or indiffer-

[7] These strategies were presented as follows: "Get all Negroes to take the same stand on racial issues"; "Black leadership of Negro organizations, but allow whites to be members"; and "Negroes should strike back if attacked." The items were moderately intercorrelated (average T_c = .21) and were combined as follows in a summated index: strongly agree, 2; agree 1; and all other responses, 0. Scores ranged from 0 to 6. Although no data were available on militancy, a recent study by Dizard (1970) found a moderate relationship between attachment to black identity (natural hair style, etc.) and militancy.

[8] The two items are: "All pupils should attend school together" (strongly agree, 2; agree, 1; other responses, 0); and "If you could choose, in what kind of neighborhood would you prefer to live?" (integrated, 2; most residents of another race, don't know, and don't care, 1; and all residents of the same race, 0). Scores range from 0 to 4. The two items were moderately intercorrelated (T_c = .33).

ent toward racial integration on degree of identification with the black community; the two attitudes were completely unrelated (T_c = .01).

It should be noted that neither residence in an integrated neighborhood nor attendance at a racially mixed school is a valued goal in black-power ideology, since each implies that fulfillment of the black person can only be achieved if he associates with whites. However, the right of residential choice, within the limits of personal resources, is a fundamental aspect of racial equality, and this right is demanded by Negro groups that vary widely on ideology. While boys who endorsed black solidarity were not less likely to favor racial integration than other youth, they were more inclined to oppose racial inequality manifested by exclusive white neighborhoods.[9]

Identification with black solidarity was defined by scores of 3 or more on the index; this represents approval of at least two of the three strategies—black leadership, unity, and self-defense. On the integration index, positive sentiment was defined by scores of 3 or more. According to a cross-tabulation of these indexes, 29 percent of the boys were classified as pluralists, 40 percent as integrationists, 15 percent as nationalists, and 16 percent as uncommitted.

If boys in the four groups hold views consistent with their attitudes toward black solidarity and integration, we should be able to predict their relative position on strategies for achieving racial change, racial-group preference, and interracial experience. Two strategies that are generally compatible with the ideology of black solidarity were included in the survey: the application of pressure to achieve residential desegregation in which the issue is open housing as a right of black people and not personal interest in neighborhood integration; and the improvement of living conditions in the black community. The pluralists' identification with the black community and integration suggests that they would be most likely to support both strategies. Since ingroup identification is commonly associated with intergroup distance and ethnocentrism, we expected the nationalists to rank above other boys in the sample on preference for Negroes over other racial groups, interracial distance, and support for the Black Muslims. Integrationist groups, such as the NAACP, are consistent with the ideology of boys who favor integration, regardless of attitude toward black solidarity. By their indifference toward black solidarity and integration, the uncommitted show relatively little interest in racial change and would therefore be least likely to favor any change strategy.

Two procedures were employed for determining the degree of inter-

[9] Boys who agreed that whites should be required to "accept Negroes into the white community" were more likely to identify with black solidarity than to approve of racial integration as a personal goal (T_c = .21 vs. .08).

group distance on the above variables and in all subsequent tabular analyses. To test the hypothesis that all groups are similar on percentage values for each indicator, we used a simple, one-way analysis of variance. On measures which vary significantly across the four groups, the relative distance between groups was determined by comparing differences between group percentages and ordering them according to size.

TABLE 1

COMPARISON OF FOUR INTERGROUP ORIENTATIONS BY ATTITUDES TOWARD CHANGE STRATEGIES, RACIAL PREFERENCE, AND INTERRACIAL EXPERIENCE

	PERCENTAGE OF NEGRO BOYS BY INTERGROUP ORIENTATION				
ATTITUDE	Uncommitted $N=46$[a]	Nationalists $N=45$	Integrationists $N=114$	Pluralists $N=81$	SIGNIFICANT DIFFERENCE (F-RATIO)
Change strategies:					
Favors desegregation and improvement of black community[b]	6	41	20	47	*
Racial preferences and interracial experience:					
Prefers own race[c]	30	48	17	26	*
Interracial contact[d]	46	43	63	57	N.S.
Likes white people	27	22	53	48	*

[a] Minimal number of cases.

[b] Percentage of boys in each group who strongly approve both of the following policy statements. "Require whites to accept Negroes into white community" *and* "Improving conditions in the black community."

[c] Each percentage represents the proportion of boys who preferred their own race on at least one of the following items: "I would prefer my teachers to be ———"; "Most likely to succeed in life", and "Run pretty much everything in this school."

[d] An index of interracial contact was constructed from the following three items: "How many of your friends are white?" (half or more was scored 2; only a few, 1; and none, 0), "Have you ever eaten at a table with a white?" (sometimes or more often, 1; never, 0); "Have you ever gone to a party where most of the people were white?" (sometimes or more often, 1, never, 0). The percentage of boys in each group who scored 3 or 4 on the index is shown above.

* $p < .01$.

According to the data, strong approval of residential desegregation is most prevalent among the pluralists, followed by the nationalists, integrationists, and the uncommitted. Since comparable results were obtained on improving conditions in the black community, the percentage who approved of both strategies is shown in table 1. If we compare the two groups that favor integration, it is clear that identification with black solidarity makes a substantial difference on regard for the collective needs of black people. A majority of the integrationists shows relatively little concern for its racial group, and this is even more true of the uncommitted boys. As noted earlier, very few boys favored the exclusion of whites from Negro organizations, but this position is most popular among the nationalists (26 percent—not shown in the table).

Both interracial contact and especially acceptance of whites are correlated with support for racial integration and do not vary appreciably by identification with black solidarity. It should be noted that racial antipathy (dislike whites) was not prevalent in any of the groups, although this attitude was more commonly expressed by the nationalists (approximately 20 percent). The nationalists also stand out above other boys in the sample on ethnocentrism. They were most apt to cite their racial group as most likely to succeed in life, to claim that most student leaders in their school are Negroes, and to prefer a teacher of their own race (cf. Marx 1967, p. 114).

The nationalists did not differ significantly from the prointegration boys on support for the NAACP (at least two-thirds voiced strong approval) or on support of CORE, but they were more likely to support the Muslims (66 vs. 32 percent). Consistent with their relative indifference toward racial change, the uncommitted were least likely to favor all three groups; less than a third, for instance, strongly approved of CORE and the NAACP.

With few exceptions, differences between the four attitude groups are generally consistent with our expectations. The greatest distance on support for the two change strategies occurs between the uncommitted, on the one hand, and the pluralists and nationalists, on the other. Interracial experience and sentiment toward whites distinguish boys who favored integration from those who were indifferent or negative in attitude, but the difference on contact is not as large as one might expect. And on racial preference, intergroup distance is most pronounced between the nationalists and integrationists. Across all between-group comparisons, the differences are clearly a matter of degree. For instance, the nationalists do not prefer racial integration, but very few are racially exclusive and antiwhite in their attitudes. Preference for exclusively black organizations is the most direct measure of support for black separation, yet only a fourth of the nationalists expressed this attitude. At this point in the analysis, the nationalists are more accurately described as race conscious and indifferent to their participation in an integrated society than as explicit advocates of racial separation.

DIFFERENTIAL OPPORTUNITY AND COMPETENCE

The differential life opportunity of boys in the four groups is measured by indicators of status origin and prospects, including family status (cultural and economic) and emotional support; teachers' evaluations, satisfaction with school, and behavioral compliance; and future prospects. Intelligence-test scores are used as the primary index of intellectual competence. The following analysis is divided into three major

sections: family and personal resources, school experience, and achievement prospects. The concluding discussion provides an overview of the research, its implications and limitations.

Family and Personal Resources

The relation between race and restricted life chances is expressed in institutional structures and their deprivational consequences for personal competence and family resources. A wage system which fails to provide an adequate family income, underemployment, and joblessness minimizes the cultural and economic resources of many black families, and these deprivational conditions adversely affect intellectual development among the young. We assumed that belief in racial integration and individualistic achievement would be associated with the mastery experience provided by a high level of family and individual resources; that an incompetent self would produce indifference toward black solidarity and integration; and that an intermediate level of resources—neither high nor low—would enhance sensitivity to social barriers and the collective interests of black people, but not to the point of undermining faith in the desirability of integration. In view of the traditional popularity of black nationalism in the lower classes, we expected the nationalists to have a more deprived background than the pluralists.

Family deprivation and support.—Degree of family support or deprivation includes both objective and subjective aspects, such as father's occupational status and perceptions of parental emotional support. Boys who held each of the intergroup orientations were compared first on two relatively objective dimensions of family deprivation: *cultural*—child's birthplace in the South (most of the parents were born in this region) and low parental education (less than high school); and *economic*—father absent or in an unskilled or semiskilled job and a large family (at least four siblings living at home). Parents of boys who were born in the South were relatively low on educational attainment, and a large number of children was most common among low-status families.

The four groups are relatively similar on occupational status and father absence (table 2). Though contrary to our expectations, this result may reflect the spread of black consciousness to the middle class, as suggested by recent surveys (Campbell and Schuman 1968). Moreover, differences on cultural deprivation do not correspond to our expectations, for it is the pluralists who stand out in this respect. Thirty percent of these boys were born in the South (versus an average of 18 percent for the other groups), and their fathers were less likely to have a high school education (61 percent did not vs. 41 percent of the other boys). The disparity between father's education and occupational status among

the pluralists suggests that a number of their fathers achieved good jobs despite an educational handicap, and the data tend to bear this out. In the low-education category, the percentage of fathers who were employed in at least a skilled job was larger among the pluralists than among other boys (39 vs. 21 percent). This kind of parental experience may strengthen belief in the value of individual effort and also enhance the desirability of integration.

While the uncommitted were not more deprived in occupational status than other boys, they were more likely to have a large number of brothers and sisters. Aside from its economic burden, a large family

TABLE 2

INTERGROUP ORIENTATIONS AND FAMILY DEPRIVATION

	Percentage of Negro Boys by Intergroup Orientations				
Family Deprivation	Uncommitted $N = 43$[a]	Nationalists $N = 42$	Integrationists $N = 108$	Pluralists $N = 77$	Significant Difference (F-Ratio)
Cultural:					
Child born in the South—father has less than a high school education	57	49	46	72	N.S.
Economic:					
Father's occupational status:					
Skilled or higher . . .	33	37	38	40	N.S.
Skilled or unskilled . .	44	45	46	45	N.S.
Father absent (low status) .	23	18	16	15	N.S.
Four or more sibs in household	62	44	34	33	*

[a] Minimal number of cases

* $p < .01$.

could produce indifference or apathy by minimizing the kind of parent-child interaction that stimulates intellectual growth and educational skills.

The family background of the nationalists is surprisingly similar to that of boys who only favored integration, but the former were less confident that their parents would stick by them if they got into trouble, a difference which is greatest in relation to father (table 3). There is no evidence, however, that this expectation is expressed in alienation from the family. Loyalty to parents is not significantly related to confidence in parental support and is most prevalent among the nationalists and uncommitted. Upon further examination of the data, familistic sentiment was found to be more highly related both to a perception of the larger environment as threatening and to low ability than to the perceived quality of

generational relations. Moreover, fatalistic attitudes are associated with familistic sentiment, especially among the uncommitted, while a perception of others as untrustworthy, self-oriented, and morally expedient is most characteristic of the familistic nationalists.[10] Regardless of deficiencies in family life, this definition of reality would tend to increase the emotional significance of home as a protective haven.

Competence: IQ and teacher evaluations.—Social knowledge and personal efficacy are commonly related to level of cognitive functioning; the brighter the child, the more he knows about his world and believes that he can influence others. Consistent with these trends, boys who identified with either or both racial integration and black solidarity were sub-

TABLE 3

COMPARISON OF INTERGROUP ORIENTATIONS ON PARENTAL SUPPORTIVENESS AND FAMILY TIES

	PERCENTAGE OF NEGRO BOYS BY INTERGROUP ORIENTATIONS				
PERCEIVED PARENTAL SUPPORTIVENESS AND FAMILY TIES	Uncommitted $N = 47$[a]	Nationalists $N = 46$	Integrationists $N = 115$	Pluralists $N = 83$	SIGNIFICANT DIFFERENCE (F-RATIO)
Parental emotional support:[b]					
Mother	53	41	57	65	N.S.
Father	38	28	48	49	N.S.
Familism:					
Main loyalty will be to parents even after I marry: agree	58	49	26	29	*

[a] Minimal number of cases.

[b] Percentage in each group who gave "certainly" as a response to, "Would your mother/father stick by you if you got into really bad trouble?"

* $p < .01$.

stantially higher on IQ than the uncommitted. The integrationists ranked highest in average percentile (eighth grade Henman-Nelson Test), followed by the pluralists, nationalists, and the uncommitted ($\bar{X}$'s = 33, 30, 28, and 21). The only comparison worth noting centers on the difference between the uncommitted and other youth in the sample; 56 percent of the former scored lower than the twentieth percentile, in contrast to 31 percent for the other groups. The less able boys were also found to be less confident of their ability to control their lives and were more strongly attached to parents than brighter youth.

One might expect teacher evaluations of school performance to cor-

[10] This is reported in Elder (1970). Distrust toward others does not specifically refer to relationships among blacks, which means that we cannot compare intragroup trust across the four orientation groups. This is unfortunate since much has been made of this sentiment as a barrier to cooperation in the black community.

respond to variations in measured intelligence across the four orientation groups, although grades are only a partial reflection of scholastic skills. Conduct in the class affects the quality of teacher-student relations and the rewards assigned to students; other things being equal, a desirable student is not likely to be one who is restless and aggressive, attributes which are most likely to characterize black-conscious boys with nationalist attitudes. As a measure of teacher evaluation, we selected the average English grade received during 1964.

Two results from the intergroup comparisons are noteworthy: the relatively low English grades of the nationalists ($\bar{X}$'s = 46), when compared with their IQ and the grades of other boys in the sample, and the relatively similar grades of the pluralists and integrationists—the difference here was less than one point ($\bar{X}$ = 57). Although the nationalists scored higher on IQ than the uncommitted, their grades in English were lower ($\bar{X}$'s = 46 vs. 51). A hostile or aggressive demeanor in the classroom, reinforced by the cultural bias of English grammar and literature, may well be an important element in the nationalists' difficulties with this subject. A common outlet for academic frustration is disruptive activity.

With the exception of cultural deprivation, intergroup distance (as measured by percentage differences) is greatest between the uncommitted and youth who favored racial integration (regardless of attitude toward black solidarity). This difference occurs primarily on family size, ties to parents, and IQ, as evident in tables 2 and 3. Overall, the nationalists are located between these groups on resources, and they most closely resemble the uncommitted on relations to family and test performance. The most striking finding in comparisons of the integrationists and pluralists is their similarity on most types of resources, especially economic status, family relations, and English grades. It is only on cultural status and, to a lesser extent, on IQ that the integrationists have an advantage in achievement prospects. Such prospects are least favorable for the uncommitted.

School Experience

Commitment to school is partially dependent on successful effort and the perceived value of this experience for achieving personal goals. On scholastic status alone, one would expect boys who favored integration to rank higher on this commitment than other boys in the sample, and the data generally confirm this difference. Two-thirds of the integrationists and half of the pluralists reported positive feelings toward school, as against 38 and 31 percent of the uncommitted and nationalists.

In addition to the frustration of academic problems, dislike for school

may stem from a belief that traditional course work is not consistent with the educational desires of black youth and their responsibility to the black community. One type of incongruence, which has particular relevance for the school problems of the nationalists, is produced by a disproportionate emphasis on preparing students for prestigious universities. Over two-fifths of all boys in the sample felt that teachers cared most about such students, which in effect meant an imbalance favoring white students, and this perception was shared by over half of the nationalists. A more direct indication of student preferences regarding formal education is provided by a question which asked what the most important benefit of school should be. Of the three alternatives—basic skills, ability to think clearly, and job training—only the latter is clearly at variance with the university preparatory emphasis, and it was chosen more often by the nationalists and pluralists (51 and 41 percent) than by youth in the other two groups (31 percent). Boys who preferred job training tended to dislike school (T_c = .21), regardless of intergroup attitude, but the greater vocational interests of the nationalists did not completely explain their dislike for school. Alienation from school remained most prevalent among the nationalists, even among boys who favored the other benefits of schooling.

Another plausible source of alienation from school is a strained, conflicted relationship with teachers. Racially biased treatment of students, especially in disciplinary action, is one of the more common complaints of black parents in the local community. When white and Negro students commit the same violation, it is expected that the latter will be treated more punitively by school authorities. Aside from its validity, this definition of the situation is supportive of race consciousness and solidarity. In fact, the nationalists and pluralists were most likely to regard teachers as biased toward whites, a belief also shared by at least a third of the integrationists and uncommitted (table 4). The data suggest that perceived acceptance and concern by teachers were slightly more common among the pluralists and integrationists than among boys in the other two groups, with authority conflict most evident among the nationalists. For these boys, removal from class and enforced silence in the classroom seem to reflect a general discontent with the content of schooling, since both conditions were most common among those who preferred job training as a benefit of school (T_c = .23). This preference was associated with school dissatisfaction among other boys in the sample, but such feelings were not as directly expressed in hostile or disruptive behavior. Removal from class was unrelated to a vocational preference among the uncommitted, integrationists, and pluralists.

The greater involvement of the nationalists in disciplinary action (they were also more likely than other boys to have been suspended from

school three or more times—44 vs. 19 percent) is part of a more general behavioral theme which includes athletic interests, fighting, and delinquency. On desired student identity, athletic star was most popular among the nationalists (52 vs. 36 percent), while neither this image nor any other identity—bright student, social leader, etc.—was chosen by as many as a third of the boys in the other groups. The nationalists were also more likely to report having purposively "beaten up" someone within the last year or so (60 vs. 40 percent), and they ranked highest on official encounters with law enforcement agencies, according to police records. Approximately half of all boys had been charged with a juvenile

TABLE 4

INTERGROUP ORIENTATIONS AND TREATMENT BY TEACHERS

	Percentage of Negro Boys by Intergroup Orientations				
Treatment by Teachers	Uncommitted $N = 46$[a]	Nationalists $N = 46$	Integrationists $N = 114$	Pluralists $N = 84$	Significant Difference (F-Ratio)
1. Teachers prefer whites over other racial groups (Negro, Oriental, etc.) . .	38	51	34	47	N.S.
2. Most teachers care about how well I do.	31	34	42	40	N.S.
3. Teachers like my friends	41	31	50	53	N.S.
4. Teachers just want quiet in the class.	21	48	19	24	*
5. Sent out of class three or more times.	21	44	17	18	*

[a] Minimal number of cases.
* $p < .01$.

offense, and nationalistic sentiment was more prevalent in this group than among the nondelinquents (38 vs. 10 percent). Juvenile offenses did not vary among the uncommitted, integrationists, and pluralists.

In behavior patterns, the nationalists resemble gang boys from the working class who value toughness, the display of courage, independence, and the successful defense of honor. In the classroom, gang boys may intentionally violate a rule of conduct in order to test the teacher's trust in them and demonstrate that their presence in school is indeed voluntary and should be respected as such (Werthman 1967). When the teacher uses imperatives or derogatory statements to restore order and affirm authority rights, he challenges the boys' own claims to autonomy and initiates a character contest over the preservation of honor. This classroom drama is consistent with our knowledge of the nationalists, but very little is known about their life in the peer group or gang. Those

who were offenders did tend to have friends who were or had been in trouble with the police, and, from the boys' perspective, teachers were not inclined to think well of their companions. But the nationalists were not more likely than other boys to respect or identify with best friends.

Reward deprivation in school and conflicts with white authority could result from as well as strengthen nationalistic sentiment. The acquisition of this attitude in childhood—from older siblings, peers, or parents—might enhance awareness and lessen tolerance of racial injustice, developing sensitivities and defensive tendencies which increase the likelihood of confrontations with white authority. If the demeanor of boys who are apprehended by authority figures influences their treatment or disposition, as some research suggests,[11] the nationalists' aggressiveness may be a significant factor in the severity and frequency of punishment they have received. In any case, there is a strong connection between school discipline and police arrests. Most of the boys who were expelled from school are also juvenile offenders.

In review, we find intergroup distance on estrangement from school most pronounced between the nationalists, on the one hand, and youth who favored integration, on the other. Overall there is a high degree of correspondence on positive feeling toward school among the integrationists and pluralists, although the latter were more conscious of teacher favoritism toward white students. The uncommitted closely resembled the nationalists on degree of dissatisfaction with school, but they, as well as boys who favored integration, were less inclined to act out their frustrations in the classroom. The nationalists ranked highest on occasions of interpersonal conflict and punishment by school officials and police. In these respects, the nationalists closely resemble the black nationalist sympathizers in Marx's survey of Negro adults in the mid-sixties (1967, p. 115) Approval of riots and violence as a means to an end and antipolice sentiment were most prevalent among these adults. Although substantial change has occurred in black ideology and strategy since the mid-sixties, the relative prevalence of a conflict approach to white authority among the nationalists (as we have defined them) is not likely to have changed appreciably. The nationalist perspective is of course only one form of black consciousness.

[11] Through observations of police encounters with youth, Piliavin and Briar (1964) found that juvenile demeanor has considerable effect on the severity of disposition: "Boys who in their interactions with officers did not manifest what were considered to be appropriate signs of respect tended to receive the more severe dispositions" (p. 210). Uncooperative demeanor was observed among a third of the black adolescents and one-sixth of the white youth. In this regard, it is worth noting that the nationalists were least likely to claim respect for police, in contrast to two-thirds of the integrationists.

Achievement Prospects and Anticipated Barriers

Though race is an objective element in the life chances of all boys in the study, those who favored black solidarity were most conscious of the interdependence between individual and group prospects. The implications of this awareness for goal setting and realistic expectations depend on family support, intelligence, and school success. Such conditions are supportive of individualistic achievement among the pluralists, but their sensitivity to racial barriers may produce expectations which are lower than goals. By comparison, the nationalists' prospects for achievement through legitimate channels are more limited. This factor, coupled with the nationalists' vocational conception of schooling, points to relatively low expectations and desires concerning traditional forms of higher education. A similar prediction seems applicable to the uncommitted, owing to their limited intellectual ability.

Three types of achievement prospects were identified by comparing aspirations and expectations on the completion of four years of college: desire and expectation to achieve this goal; college aspirations coupled with lower expectations; and low aspirations-expectations (below college). Only a few boys held higher expectations than aspirations. Confidence in one's opportunity and ability to succeed is particularly evident in the integrationists' outlook, and these boys were most likely to expect a college education. This expectation level and the integrationists' racial attitudes evoke in some respects the "make-believe world" of Frazier's black bourgeoisie (1957). Their optimism regarding higher education clearly produces a sizable risk of subsequent disappointments in adult life. While the pluralists do not differ from the integrationists on aspiration level, this ambition is more likely to exceed their expectations concerning future accomplishments. Higher goals than expectations reflect anticipated frustration, as well as hope, and are correlated in the present sample with anxious preoccupation with adult roles, depressed feelings, and the belief that one has to be much better than others in order to achieve comparable success. In view of the pluralists' goals and perception of the future (see table 5), it is not surprising that they were most likely to express these sentiments.[12]

Compared with boys who favored integration, the uncommitted and nationalists are less likely to think about the future and to want or expect a college education. The nationalists rank lower than the other three groups on college expectations, a perspective which is more a consequence

[12] For instance, 53 percent of the pluralists reported that they often felt discouraged, in comparison with a third of the other boys. On a six-item index of concern about the future (work, college, aptitude, etc.), the pluralists were nearly twice as likely to score in the high category as boys in the other three groups. The relation between these indexes and educational goal expectations is reported in Elder (1970).

of school difficulties than vocational interests. Such expectations were associated with school punishment, but not with a preference for job training in the schools.

Reward deprivation occurs at a different point in time for the nationalists and pluralists—the present versus the future—and this difference has at least one implication for their reactions or adaptations to deprivation. When failure is anticipated one can still maintain hope for the best, as seen in the future concerns of the pluralists, and such hope sustains com-

TABLE 5

COMPARISON OF INTERGROUP ORIENTATIONS ON EDUCATIONAL GOALS AND PERCEPTION OF FUTURE

	PERCENTAGE OF NEGRO BOYS BY INTERGROUP ORIENTATIONS				
EDUCATIONAL GOALS AND PERCEPTION OF FUTURE	Uncommitted $N=37$[a]	Nationalists $N=41$	Integrationists $N=101$	Pluralists $N=76$	SIGNIFICANT DIFFERENCE (F-RATIO)
1. Educational goals:					
College aspiration and expectation	22	12	42	24	*
College aspiration only	11	15	12	28	N.S.
Noncollege aspiration and expectation .	68	73	47	49	*
2. Sometimes feel that I have to be twice as good as others	50	46	61	65	N.S.
3. Often think about what I'll do and be after high school	24	22	50	45	*
4. Racial discrimination may prevent me from getting desired job	62	83	66	69	N.S.

[a] Minimal number of cases.
* $p < .01$.

mitment to achievement through legitimate channels. Actions that would further jeopardize prospects are likely to be avoided. By comparison, the nationalists' deprivations in school and community minimize their investments in the social order and consequently their benefits from compliance. This situation is conducive to normative expediency, and the nationalists were more likely to prefer a course of action which included breaking rules to get ahead, circumventing the law if one can get away with it, and taking advantage of "suckers."[13]

There are lower-level alternatives in higher education, such as junior college, which are within the grasp of some boys in the sample who ac-

[13] The greatest difference in approval of these actions is between the nationalists and boys who favored integration (average percentages, 65 vs. 41). The uncommitted were located between these extremes.

quired liabilities in secondary school. Junior colleges in the state of California accept students who have not completed high school, and this opportunity is widely recognized in the community. In fact, nearly half of the nationalists and a slightly smaller proportion of the pluralists expected to achieve the equivalent of a junior-college education, in contrast to a third of the other boys in the sample. Awareness of this option in higher education is vividly illustrated by the following comments of a boy with conduct and achievement problems.

> Q. How certain are you that you'll go to college?
> A. I'm pretty certain—'cause like junior college, you don't have to finish high school. You can be 18 years old to go there.
> Q. You don't have to finish high school?
> A. No.
> Q. So, you don't think you'll finish it?
> A. I mean, if something comes up and I can't finish school, I'm gonna go to college, I don't care what comes up. [Wilson 1967, p. 199]

Though boys who favored black solidarity are more aware of racial discrimination than other youth, this difference is not large in the area of occupational achievement and does not explain their relatively low educational expectations. Both personal experience with and recognition of racial discrimination are relatively common among boys in all four groups. For instance, three-fourths of the adolescents reported direct encounters with racial discrimination, and this experience did not vary by intergroup orientation (not shown in table 5). One of the missing links in the analysis is the particular interpretation that mediates the relationship between perceived racial discrimination and intergroup attitudes. It seems likely that meanings attributed to racial discrimination would vary markedly in relation to attitudes toward black solidarity For instance, boys who favor integration but not black solidarity may expect some difficulty in getting a desired job because they are black, and yet believe that they can surmount whatever barriers the future holds in store for them. Needless to say, this definition of the situation is not likely to reinforce awareness of the interdependence between individual and group prospects. On the other hand, perception of racial discrimination is likely to increase awareness of this interdependence and foster identification with the black community when deprivations associated with such acts are attributed to a white-dominated social order rather than to the self.[14]

[14] For an important contribution to the literature on blame attribution, see Gurin's (1970) study of the motivational correlates of occupational aspirations among Negro males in ten predominantly black colleges in the South. The analysis distinguished between a youth's belief in his ability to "control reinforcements" by his own efforts and a general Protestant Ethic belief regarding the role of internal and external forces in controlling the life prospects of other Negroes. As one would expect, personal con-

In terms of group attitude and status expectation, there is reason to expect greater stability of identity among the nationalists than among the pluralists. A singular interest in black solidarity would tend to strengthen racial identification through a reinforcing network of reference groups, while the dual orientation of the pluralists involves divided and perhaps conflicting loyalties and bases of self-evaluation. Moreover, a racial contrast in self-definition is more pronounced in the nationalists' world view. Status ambiguity associated with discrepant educational desires and expectations may be an additional source of instability in the pluralists' self-perception and evaluation. Self-report data in the survey do not provide an adequate test of this difference in self-concept, although the pluralists were most likely to claim that they had pretended and would prefer to be another person (49 percent).[16] Boys who identified with only one objective, either black solidarity or racial integration, were least likely to prefer to be like another person, and they did not differ in this respect (31 percent). The uncommitted were located between these extreme groups (41 percent).

Since these data do not refer to the boys' self-identification on the basis of race, or to the racial identity of the "other" person, a desire to be like someone else may not have racial significance. Thus the corresponding response of the nationalists and integrationists toward being another person may not imply similarity in racial identity. However, our results on preference for another identity do suggest that affirmation of conflicting or competing ideals is a source of inner tension and conflict (cf. Hartley 1951), an emotional state which resembles the identity dilemma poignantly described by DuBois more than sixty years ago: "One feels his two-ness . . . an American, a Negro, two souls, two thoughts, two unreconciled strivings, two warring ideals, in one dark body. . . . He simply wishes to make it possible for a man to be both a Negro and an American without being cursed and spit upon, without having the doors of opportunity closed roughly in his face" (1903, pp. 3–4).

LIFE OPPORTUNITY, COMPETENCE, AND INTERGROUP ORIENTATION

Opportunity for rewarding accomplishment and competence lessen dependence on other persons or groups, and it is through such oppor-

trol was highly correlated with aspiration measures, but students who blamed discrimination for the plight of Negroes were more likely to be activists and tended to have higher aspirations under certain conditions.

[16] The two items are, "I'm not the person I pretend to be," and "I often feel that I would like to be someone else." Percentages shown in the text represent unweighted averages for agree responses to each statement.

tunity that personal efficacy is acquired. Deprivations in this experience and skill are commonplace in the lives of minority children. Cumulative disadvantages in life prospects are coupled with powerlessness since power creates and provides access to opportunity. Smith describes opportunity, respect, and power as strategic determinants of the competent self, characterized by productive engagement with the environment: "[P]ower is the kingpin of the system. Power receives respect and guarantees access to opportunity" (1968, p. 313).

In a deprivational context, adolescent support for black power or solidarity expresses ingroup dependence and a desire to gain respect as well as improved life chances through the collective power of Negro Americans. This adaptation contrasts with the response of able youth who perceive favorable opportunities in life and feel respected, are prepared to leave their minority group in a psychological sense, and are attracted to the appeal of a racially integrated society. Some evidence of these differences between identification with black solidarity and racial integration was obtained in our sample of Negro boys of high school age.

Allegiance to black solidarity and a personal commitment to racial integration are not mutually exclusive among the identifications of black youth, although support for both ideals or neither may be stressful. A major historical theme in the black movement is conflict between the integrationist and nationalist forces, but there have always been individuals and groups that have worked to bring selected aspects of each world together in a united front. In the present study, identification with one cause—black solidarity (political power, leadership, and self-defense) or racial integration—was not predictive of attitudes toward the other. The largest group of boys favored integration more than black solidarity (integrationist), but support for both ideals ranked next in popularity (pluralists). The least popular intergroup attitudes included support for only black solidarity (nationalists) and indifference or negative sentiment toward both causes (uncommitted). By delineating intergroup attitudes and the pluralist option, we find that a substantial number of boys who favor racial integration are not indifferent to the collective interests of the black community, and that a majority of those who believe in black solidarity also believe in racial integration. Beyond the field of race relations, the typology makes explicit intergroup alternatives which are sometimes overlooked in research on two reference groups or individuals. This oversight has occurred, for instance, in studies of adolescent attitudes toward parents and peers. Until recently there has been a tendency to assume that peer and parent identification are opposite ends of the same continuum, thus excluding congruent attitudes toward both sets of reference figures.

On the empirical level, the four intergroup attitudes vary in relation

to interracial contact, ingroup-outgroup feeling, and commitment to change strategies. As might be expected, frequency of interracial contact and positive sentiment toward whites were correlated with personal interest in an interracial community; the relationship was not modified by positive or negative sentiment toward black solidarity. The nationalists ranked highest on ethnocentrism or ingroup preference, considerably higher than the pluralists and especially the integrationists, and they were most strongly attracted to the Black Muslims. Levels of ingroup preference and outgroup hostility were not comparable; only a fifth of the nationalists expressed antipathy toward whites, while approximately half of these boys reported some preference for their own racial group. Two change strategies—residential desegregation and improvement of the black community—received their greatest support from the pluralists and nationalists, followed at a distance by the integrationists and a small proportion of the uncommitted. As an intermediate group that shares some views held by the nationalists and integrationists, the pluralists couple positive interracial ties with an ingroup commitment and some uncertainty of self.

On life opportunity and competence, perceived as well as objective, the integrationists ranked above the other groups, followed by the pluralists, nationalists, and uncommitted. Factors bearing upon or indicating life chances included family status (cultural and economic), grades, and relations with authority figures in school and community, and achievement prospects, especially in education. Personal competence was measured by performance on an IQ test, subjective independence from the family, and mastery beliefs. Individualistic achievement is compatible with a favorable opportunity structure and intellectual competence, and both factors were most characteristic of the integrationists. Their family status was not substantially higher than that of other boys, but they were generally higher on IQ, school commitment and satisfaction, and achievement expectations. By comparison, the pluralists differed primarily on their lower expectations regarding future achievement; they were more aware of racial discrimination and were more likely to anticipate failure to achieve their aspirations. On a wide range of indicators, the nationalists were more limited in achievement opportunity or prospects than boys who favored integration. They tended to have less confidence in parental support, received lower grades in school, and were less satisfied with school; a larger percentage of these boys received discipline from school and legal authorities, and very few expected to achieve a college education. The uncommitted also perceived limited opportunity, but they differed most from other boys in the sample on their relative incompetence, expressed in a low average IQ, family dependence, and fatalism. In these respects, there is some resemblance

between the uncommitted and adults who are acquiescent and politically apathetic.

Since the study is cross-sectional, most of the between-group differences are not amenable to causal interpretation. Causal direction is less of a problem for family background and IQ, which are clearly antecedent to the intergroup attitudes, than for attitude and experiential variables. For instance, racial expectations held by the nationalists may well have contributed to and resulted from their low grades and authority conflicts in school. Likewise, racial isolation may be both cause and consequence of negative sentiment toward racial integration. In addition, we were unable to trace the particular paths and turning points leading to each intergroup attitude, such as childhood experiences—attitude transmission through parents and peers, encounters with discrimination, and degree of racial isolation.

The continued growth of black consciousness and ingroup commitment has important implications for the content of child socialization in families established by this age group, for the correlates of nationalistic feeling, and for the current popularity of pluralism. In what area, if any, is ideological change related to generational change in child rearing and family relationships? Research on this question would benefit from an understanding of the intergroup attitudes of girls in view of the centrality of Negro mothers in child rearing and culture transmission. An important question here is the relative stability of each intergroup attitude from adolescence to the adult years, since a number of studies have found black consciousness to be most prevalent among the young. For reasons stated earlier, one would expect the nationalist perspective to be more resistant to change than the dual orientation of the pluralists. Second, racial change since the mid-sixties suggests that the nationalist attitude (as we have defined it) has become more popular at the expense of the uncommitted and integrationist groups, and that contemporary youth who support only black solidarity are characterized by a greater sense of mastery, pride, and commitment to the future. Within the nationalist group in the present sample, this outlook was most characteristic of boys who did not approve of the Black Muslims.

If nationalist sentiment has become more popular among the young in recent years, it remains a minority position which is restricted by the persistent strength of support for racial integration in this age group. The converging levels of support for racial integration and black solidarity suggest that advocates of both causes have increased markedly since the mid-sixties. This perspective expresses an illusive ideal, a pluralistic community in which blacks can affirm their racial identity, contribute to the social, economic, and cultural life of their people, and freely participate in relationships with whites that are characterized by friendship and

interdependence. Though reality continues to weaken the plausibility of this goal, a large body of sentiment in the black community remains committed to the belief that it is or will be possible for the young to state with equal pride and certitude, "I am black, I am a man, I am an American."[16]

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[16] This sentence is adapted from Gordon's concluding sentence in *Assimilation in American Life.*

Black Invisibility, the Press, and the Los Angeles Riot[1]

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Previous survey research indicated the importance of "black invisibility" for understanding the Los Angeles riot of 1965 and black reactions to it. The extent and nature of this invisibility were explored by means of a content analysis of Los Angeles newspapers from 1892–1968. The results indicate that little attention has been given in the press to blacks throughout the twentieth century, and coverage of blacks relative to their proportion of the population actually diminished from 1892 to just before the riot. The great increase in coverage during the riot itself returned rapidly to the pre-riot level by early 1966. The white public in Los Angeles, local white public officials, and subsequent press coverage were largely unsympathetic to Negro grievances. While press attention to blacks has not increased, its content has changed markedly from coverage of conventionally stereotyped activity to emphasis on interracial conflict. Possible consequences of black invisibility for race relations in the United States are suggested.

Ralph Ellison (1952, pp. 7–8), the black author, has eloquently described man's need for attention and his potential for violence when this need is frustrated: "I am an invisible man . . . simply because people refuse to see me. . . . You ache with the need to convince yourself that you do exist in the real world . . . and you strike out with your fists, you curse and you swear to make them recognize you." Eighteen years after Ellison's portrayal of black invisibility, the Watts ghetto erupted into violence. In this paper, we wish to explore the nature of black invisibility in Los Angeles and its relationship to the racial violence that rocked Los Angeles and many other American cities during the 1960s.

By "black invisibility," we mean a condition describing the perceptual world of the white American. He is physically isolated from blacks, hence

[1] This study was supported by National Science Foundation grants to author Sears. It was conducted while Johnson and McConahay were USPHS predoctoral fellows in social psychology at UCLA. A preliminary version was presented at the annual meeting of the Western Psychological Association in Vancouver, B.C., June 1969. We wish to thank newspaper coders—Karen Stanley Ebeling, Sandra Lanto, Don Mednick, and Albert Lauck—and UCLA librarians—Mrs. Frances V. Lovejoy and Mrs. Frances E. Rose. Computing services were provided by the UCLA Health Sciences Computing Facility under NIMH grant FR-3.

they are physically invisible to him, and his few physical contacts with them are structured so that blacks are psychologically invisible to him as well. Thus, blacks essentially do not exist in the subjective world of the white American.

The importance of black invisibility in contributing to racial violence is suggested by the salience of "attention-seeking" in blacks' interpretations of the Watts insurrection. Martin Luther King reported that in the days following the outburst, he was touring the riot area with Bayard Rustin and Andrew Young when they encountered a group of black youngsters shouting joyously, "We won! We won!" The three civil rights leaders asked them, "How can you say you won when thirty-four Negroes are dead, your community is destroyed, and whites are using the riot as an excuse for inaction?" The response was shouted back immediately: "We won because we made them pay attention to us" (King 1967, p. 112).

Survey data also emphasized the centrality of increased white awareness of blacks in inducing optimism among blacks about the riot's consequences. Throughout the black community, the riot was interpreted as a violent protest against white mistreatment and neglect (Sears and Tomlinson 1968). Blacks perceiving "attention-seeking" as the purpose of the riot were more optimistic about its outcome than those perceiving instrumental or cathartic purposes; similarly, those feeling the riot helped the Negroes' cause by calling attention to blacks were more optimistic than those feeling the riot helped by changing white attitudes, bringing economic aid to the ghetto, or by having psychological impact upon black people. Furthermore, "attention-seeking" accounted for more of the variance in optimism regarding riot aftereffects than any of the usual indicators of social position or demographic location (Sears and McConahay 1970), and even accounted for more variance than riot participation itself (Sears and McConahay 1969).

BLACK INVISIBILITY

The invisibility of the black population prior to the riots is in some sense well known, yet its true magnitude usually shocks even informed observers. The causes of invisibility are both physical and psychological. Physical invisibility is a consequence of thoroughgoing racial segregation of housing, education, occupation, and social life in the United States. Whites have little personal contact with blacks in any setting. Indeed, from the earliest years of a white child's life, he is isolated from blacks. Coleman et al. (1966) reported that, nationwide, almost 80 percent of all white schoolchildren of all ages attend schools that are more than 90

percent white, and that the average white elementary or secondary school pupil attends a school in which 97 percent of the teachers are white.

Los Angeles seems to be no exception. The opportunity for interracial contact there was as slim as in any other northern or western city in the years before the 1965 riot. Residential segregation has been at least as thorough in Los Angeles. The best data come from Taeuber and Taeuber's (1965) index of residential segregation which—with a range of 0–100—may be interpreted as the minimum percentage of nonwhites who would have to change the block on which they live in order to produce an unsegregated distribution. For Los Angeles, this percentage was 84.2 in 1940, 84.6 in 1950, and 81.8 in 1960, placing it generally around the middle of the distribution for major northern cities—more segregated than New York and Washington, but less than Chicago and Detroit.[2] Studies of the degree of school segregation in Los Angeles make the same point (Caughey and Caughey, 1966). Because schools are filled on a neighborhood basis, and the neighborhoods are highly segregated, the Los Angeles schools are as segregated as those of other major northern cities.

Negroes have represented a substantial minority in the city of Los Angeles since World War II, totaling 13.5 percent in the 1960 census. Yet whites rarely come into contact with Negroes in their everyday lives. A 1969 survey of whites in the northern San Fernando Valley, a middle-class suburban area, found that 58 percent said they "are around Negroes" at most once or twice a week. Indeed, 36 percent said they had no contact at all with Negroes in an average week (Sears and Kinder 1970) Of the whites interviewed after the riot—half of whom had deliberately been drawn from the relatively few integrated areas of Los Angeles—only 13 percent said they had "frequent" contact with Negroes living within a block or two of their homes, 14 percent said they had "frequent" contact with Negroes in clubs, organizations, and informal groups, and 25 percent said they had "frequent" contact with Negroes at work (Morris and Jeffries 1970, pp. 480–601). Thus, it is apparent that few whites have any regular, frequent contact with blacks. Their immediate social environments include a vastly smaller proportion of blacks than does the metropolis as a whole.

The invisibility of the black community to whites is further emphasized by the fact that relatively few whites have ever even visited the major black residential areas of Los Angeles. In the post-riot survey of whites (see Morris and Jeffries 1970, pp. 480–601), only 23 percent

[2] This no doubt overestimates the degree of integration in Los Angeles. The index is computed for all nonwhites, rather than solely for Negroes, thus including large numbers of Orientals in West Coast cities, but not elsewhere. Since Orientals are somewhat more assimilated residentially than Negroes, the index is distorted downward in these cases.

claimed to have ever shopped, worked, visited friends, or lived in Watts; 31 percent had never been to Watts, and 46 percent had only driven through the area. Similarly, 54 percent had never been to Pacoima—a small black area in the San Fernando Valley—and 54 percent had never been to Leimert Park, a middle-class black area in south-central Los Angeles. In short, it is clear that the average white man in Los Angeles has only a trivial amount of personal experience with blacks. He lives in a white world. Blacks, on the other hand, more often move back and forth between the dominant white world and the black ghetto.[3] The poor in general, and the blacks in particular, are moderately familiar with the affluent areas of American cities, but are themselves invisible to the more affluent and powerful in our society.

The psychological invisibility of black people takes over where physical isolation fails. The few interracial contacts that do occur usually place the blacks in an inferior role—waitresses, nurse's aides, and trash collectors—to which whites are generally indifferent. But invisibility is not by any means limited to blacks in low status positions. Jacobs (1967) has sensitively described the ways in which whites communicate psychological invisibility to blacks in even the best of public agencies. He argued that the middle-class whites who staff and direct the bureaucracies in school systems, welfare bureaus, police departments, housing agencies, and hospitals make decisions in terms of what is most convenient for their own needs or the needs of other middle-class whites to whom they must answer, rather than the needs of the blacks they serve. For example, the rules regarding the presence of a man in a household receiving Aid to Families with Dependent Children consider the sensitivities of the visible white taxpayer, not the needs of the invisible black child whom the program is supposed to help.

[3] By these same standards, however, the majority whites are not at all invisible to blacks. Black contact with white residential areas was considerably more common than white contact with black areas, as indicated by our post-riot survey of blacks. Only 10 percent of the blacks interviewed had never been to Beverly Hills, and 23 percent had never been to Westwood, to mention two of the more exclusive white areas of Los Angeles (of course, this contact of blacks with white areas was principally the result of employment or casual driving, rather than residential mixing or visits with friends). Black people also reported somewhat more personal contact with whites than whites did with blacks. For example, 19 percent of the blacks reported "frequent" contact with whites in their neighborhood, and 23 percent on the streets. Almost half of the Negroes had had frequent contacts with whites at work, whether with their employer or with a fellow worker. Similarly, whites are much more visible to black schoolchildren than blacks to white children; for example, in the mid-1960s the average black elementary schoolchild was in a school with 35 percent white teachers, while white children attended schools with only 3 percent black teachers. And 35 percent of the black first-graders were in schools more than 10 percent white, while about 20 percent of the whites were in schools more than 10 percent black (see Coleman 1966, p. 3). Harrington (1962) has emphasized the same imbalance in discussing the invisibility of the poor more generally.

Given that whites have very little direct personal knowledge of blacks, the mass media could potentially fill an important gap, communicating to whites the attitudes, feelings, life styles, and even the very existence of black people. Indeed, it is apparent that, without the aid of the media, most whites are likely to get very little information of any kind about blacks.

This study investigates media attention to the black population, therefore, for two main reasons. First, media attention reflects the degree of black visibility to whites in America at any given time, and thus is a useful indicator of it. Second, media attention also partially governs black visibility, by partially determining the amount of second-hand communication whites receive about blacks.

The daily press was chosen as the primary data source, because (1) we wished to trace black invisibility over a long historical period, and (2) press coverage could be systematically and reliably measured at relatively low cost, whereas other media could be investigated only with considerably greater expense, and on the basis of much less complete archives.

Our basic hypothesis was that historically the white majority in Los Angeles had paid almost no attention to the black community, either in the media or in everyday life. Our data collection was aimed at three main issues: (1) to investigate press attention to blacks throughout most of the history of Los Angeles; (2) to determine whether black invisibility, as reflected in the press, was increasing or decreasing before the 1965 riot; and (3) to determine whether or not the riot actually contributed to overcoming black invisibility.

METHOD

Sample Surveys

The data come from sample surveys of black and white Los Angeles residents, and from a content analysis of Los Angeles newspapers. The survey data were obtained in interviews conducted in late 1965 and early 1966, in the aftermath of the Watts riot of August 1965. The black sample ($N = 586$) was representative of the large portion (46.5 square miles) of south-central Los Angeles sealed off by a curfew imposed during the rioting. The curfew zone contained about 75 percent of the blacks living in Los Angeles County, thus representing the major concentration of blacks in the metropolitan area. Interviewing was done by black interviewers living in the curfew zone. For more information on the nature of this sample and the method employed, see Tomlinson and TenHouten (1970, pp. 127–39).

Whites ($N = 583$) were sampled from six communities in Los Angeles

County (half of which were racially integrated and half nonintegrated) at high, medium, and low socioeconomic levels. This sample was therefore not wholly representative of the county, overrepresenting high socioeconomic status and racially integrated areas, thus probably underestimating racial hostilities. Nevertheless, it represents a useful approximation of white opinion. The study is described in more detail by Morris and Jeffries (1970, pp. 480–601).

Coding Press Coverage

References to Negroes in the two major Los Angeles metropolitan newspapers were analyzed for the period 1892–1968. The sampling of newspapers to be coded was most intensive during the period from 1964 through 1968, to obtain sensitive indicators of attention in the years surrounding the riot. For the Los Angeles *Times*, two issues were randomly selected from each year from 1892 to 1964, then one per month from August 1964 through 1966. Each day's issues during the Watts riot were also included. For 1967 and 1968, ten papers were selected with no more than one for each month.

The other newspaper analyzed was the Hearst chain's *Herald-Examiner* and its several predecessors—the *Evening Express*, the *Evening Herald*, the *Herald-Express*, and the *Examiner*. Two issues were selected for each period of five years from 1892 to 1930, and three for each five years from 1931 to 1964. The month, week, and day were selected randomly. Which one of the several predecessors was coded prior to the final emergence of the *Herald-Examiner* was also chosen randomly. In addition, one newspaper from three of the last five months in 1964, and from six months each of 1965, 1966, 1967, and 1968 were chosen. A total of 144 *Times* and 71 *Herald-Examiners* were ultimately coded.[4]

The coder first selected all those articles in a given newspaper that referred to Negroes. An article was considered to refer to Negroes if it contained racial words, referred to Negro persons, named a pictured Negro, referred to laws and/or legislation dealing with racial matters, to geographic units known to be predominantly Negro (e.g., Watts, Harlem, Nigeria) or a geographic location known to be in a predominantly Negro area as determined by census tract data (e.g., 1600 W. 115th St., Los Angeles), to civil rights demonstrations, to riots in which Negroes

[4] The original plan was to take a constant sample from 1892 to 1963. Starting in 1964, a larger sample was drawn to allow a more detailed analysis of the nature of coverage leading up to and subsequent to the Los Angeles riot. As coding progressed, the time-consuming nature of gathering the data became evident, making it necessary to trim the sample. Early analyses showed a consistent low level of Negro space prior to the 1960s. For this reason, half of the original sample for 1936–50 and a quarter of the 1951–63 sample were not coded to enable more intensive analysis of the years surrounding the Los Angeles riot. For the same reason, newspapers published in 1967 and 1968 were not content-coded.

were known to predominate, or pictured a race-related scene, such as a riot scene.

Two measures of the volume of coverage were drawn from this coding. One was simply the number of news items referring to Negroes per full page of news in the newspaper. A news item, by our definition, could be anything from one word to a five-page article, however. Because of this great variability in the amount of space devoted to any single item, a second measure was also used. This was the percentage of the total news space that was devoted to Negroes. This was determined by measuring each item referring to Negroes in square inches, and then measuring the entire issue for total square inches of news space. In determining space devoted to Negroes, only the amount of space that dealt with Negroes in the article was used along with the headline space if the article was more than 75 percent devoted to news about Negroes or if there were racial words in the headline. Advertising was not included in the total news space, and advertising with references to Negroes was not coded (for data on Negroes in advertisements, see Kassarjian 1970).[5] The sports and comic sections of the newspapers were arbitrarily excluded from the analysis as not constituting news space. Therefore, both measures reflect coverage of Negroes relative to total news space, exclusive of advertising, sports, and comics.

For the main part of the analyses, three coders were used. Coder 1 (C1) coded ninety-eight issues, coder 2 (C2) eighty-four, and coder 3 (C3) fifteen. To measure coding reliability, a subsample of fifteen newspapers (with 204 articles referring to Negroes) was coded by both C1 and C2, and two papers (with forty-four articles referring to Negroes) by both C1 and C3. Intercoder reliability was assessed on (1) the number of news items referring to Negroes found per issue, (2) the news space per reference, and (3) whether or not the headline should be included as referring to Negroes. On these latter two dimensions, intercoder reliability was quite high. With respect to the measurement of space, $r = .98$ between C1 and C2, and $r = .93$ between C1 and C3; C1 and C2 agreed in 93 percent of the cases on whether or not the headline met the criteria for inclusion in Negro space, and 95 percent agreement held for C1 and C3. Reliability was more mixed on number of news items found and coded as referring to Negroes, but is probably satisfactory.[6] In any case,

[5] For the period 1932–68, total news space was computed by measuring the total newspaper space—exclusive of comics, sports pages, and classified ads—then multiplying by the proportion that news linage represented for that year of display advertising linage plus news linage combined (i.e., excluding classified ad linage, office and legal advertising, etc.). For these latter figures we wish to express thanks to the Los Angeles *Times*. The amount of advertising prior to 1932 was estimated by counting the pages of advertising in a random issue for each year.

[6] Agreement on the number of news items found and coded as Negro was rather high between C1 and C3 (each coded 89 percent of the total items that either found), but

the main results of the study are very similar for the two measures of press coverage, and across the two newspapers coded, so one should feel considerable confidence in them.

Coding News Content

In addition to measuring the volume of press coverage as described above, the coders assessed the content of news items. The coder first assigned each item to one of 197 content categories. To simplify the data presentation, these were later grouped into four main groups with a total of ten subcategories.

The first major category, *Stereotypes*, consisted of three subcategories. "Antisocial" contained all crime and other antisocial actions by individual Negroes. "Sensational" consisted of all sensational news not in other categories, such as accidents, natural catastrophes, and social conflicts that were neither antisocial nor concerned with civil rights, such as a Negro serving as a witness in court against a white man. "Entertainment" included all references to black performers.

The second major category, *Civil Rights*, also included three subcategories. "Positive Steps" consisted of all items reporting actual or advocated advances in Negro rights, and coverage of civil rights leaders and groups. "Negative Steps" contained those items reporting opposition to integration or civil rights, steps taken against Negro rights, and instances of discrimination. The "Ambivalent" category contained all coverage of civil rights and political activity relevant to Negroes that neither promoted nor blocked their welfare in terms of actions taken or suggested. It also included nonviolent conflict over civil rights at the individual, group, and governmental levels, such as "civil rights demonstrations" and "poverty program criticized."

The third main category is *Interracial Violence*. This contained all coverage and follow-up of interracial riots, and other instances of interracial violence, such as lynchings and killings of civil rights workers.

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less between C1 and C2; while C2 coded 96 percent of the items that either found, C1 coded only 76 percent. Those items only found by C2 were mostly small parts of larger articles. Thirty-three percent were less than one square inch in space (i.e., less than four lines of an average column) and 72 percent were parts of larger articles. Hence the discrepancies do not seem serious in terms of the larger goals of the coding, in that there were no gross oversights or disagreements as to what constituted a "Negro" item. Also, these minor disagreements did not seem to affect the main dependent variable, the percentage of news space devoted to Negroes, since the reliability for C1 and C2 on this measure was $r = .95$, including the missed articles. Two additional coders (C4 and C5) were used to expand the *Herald-Examiner* sample for the number of news items; C1 and C4 coded two of the same papers for a total of thirty-five articles; C4 found 86 percent of the articles either found, and C1 found 80 percent of the articles either found; C1 and C5 coded three of the same papers, for a total of forty-one articles; C1 found 90 percent of the articles either coded and C5 found 80 percent.

The fourth category, *Other*, included three subcategories. "Everyday Life" contained the news of Negroes participating in social activities, cultural events, religion, business, education, and other news of a favorable nature, such as "Negro wins award." The "International" category contained all references to black nations and blacks of other countries. A "Miscellaneous" category was used for other items not classifiable in these terms where references were too brief and obscure, such as in an index, or unclassifiable, such as the story about a family being awakened in their burning home by the barking of a dog named "Nigger."

PRE-RIOT VISIBILITY

Amount of Press Coverage

During the long period from 1892 to the Supreme Court's school desegregation case of 1954, there was almost no coverage of blacks in the Los Angeles press. As shown in figure 1, less than 1 percent of the total news space was normally devoted to blacks, except for a brief period early in the century when considerable racial strife surrounded the imposition of rigid Jim Crow regulations in the south. Aside from that, press coverage of Negro news was uncommon in either the Los Angeles *Times* or the *Herald-Examiner*, with coverage being remarkably similar in the two papers. Even after the major growth of the local black community began during World War II, news space devoted to Negroes showed no substantial increase. Blacks must indeed have been largely invisible to whites in Los Angeles during these many long years.[7]

Many observers believed that sympathy and attention to Negroes were increasing in the 1950s and 1960s, due to the school desegregation decision of 1954 and the increasing civil rights activism thereafter. Do the data show that black visibility was rising before the riot of 1965? At first glance it may appear that the data do show an increase in coverage; from 1893 to August 1965, both newspapers showed statistically significant increases in the amount of news space devoted to Negroes, and the number of news items referring to them increased significantly in the *Times*, but only slightly in the *Herald-Examiner*. Figures 1 and 2 give the data.[8]

[7] The few earlier studies of press coverage of Negroes also report that it has been very small relative to the size of the Negro population (cf. Simpson's [1936] sampling of four Philadelphia newspapers from 1908 to 1932, and Gist's [1932] content analysis of Negro news during the early 1930s). Carter (1957) reports that southern papers devoted less than 1 percent of their news space to desegregation news immediately after the Supreme Court rulings were made.

[8] The statistical significance of pre-riot increases in press coverage of Negroes from 1893 to 1965 is as follows: (1) percentage of space—*Times*: $F = 40.40$, 1/98 df, $P < .001$; *Herald-Examiner*: $F = 6.34$, 1/23 df, $P < .05$; (2) news items per page—*Times*: $F = 4.08$, 1/98 df, $P < .05$; *Herald-Examiner*: $F = 0.32$, 1/31 df, N.S. The F-ratios are for the linear effects of coverage over years, by analysis of variance. All significance tests are based upon five-year groupings until 1963, thus data from 1892 have been excluded.
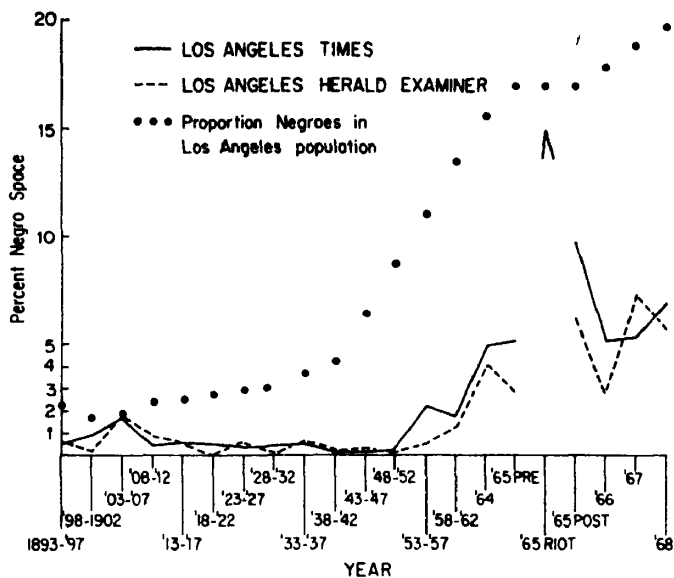
FIG. 1.—Percentage of news space devoted to Negroes
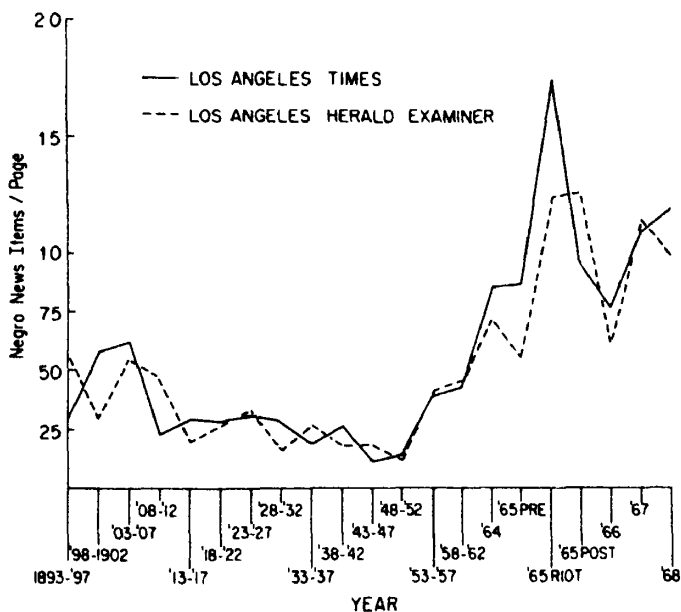
FIG. 2.—News items per page referring to Negroes

However, the increases in press attention prior to the riot were actually rather slight, except for the *Times'* increase in news space. They did not even keep pace with the rapid growth in the size of the local black community. As shown in figure 1, the proportion of blacks in Los Angeles increased greatly after 1940. If we correct for this growth, press coverage of blacks actually *decreased* significantly before the riot (the data are shown in figs. 3, 4). That is, relative to the percentage of Negroes in Los
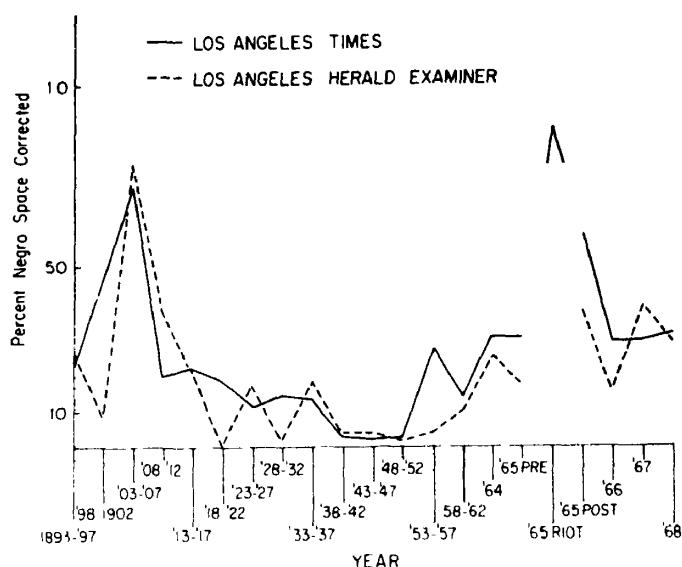
FIG. 3.—Percentage of news space devoted to Negroes, corrected for proportion of Negroes in Los Angeles.

Angeles, press coverage of blacks significantly declined in both newspapers, by both of our indices, from 1893 up to the riot. The fact that data from the two newspapers are so similar adds considerably to the credibility of this finding.[9]

[9] Correction for black population growth was made by dividing the dependent variables (news space and news items) by the percentage of Negroes in the city of Los Angeles during each time period. The city figure was used because it contained most of the local Negroes, and because the riot took place largely within the city. Since most blacks live within the city limits, county proportions have always been lower, but have increased at roughly the same rate. The national percentage of Negroes remained roughly constant throughout the period of this study, at around 10 percent. The statistical significance of this pre-riot decrease in press coverage of Negroes from 1893 to 1965, when corrected for Negro proportion of Los Angeles city residents, is as follows: (1) percentage space—*Times:* $F = 3.48$, 1/98 df, $P < .10$; *Herald-Examiner:* $F = 12.99$, 1/23 df, $P < .005$; (2) news items per page—*Times:* $F = 42.18$, 1/98 df, $P < .001$; *Herald-Examiner:* $F = 1.52$, 1/31 df, N.S. This decrease is even more striking when one considers that the present data have been corrected for advertising. The proportion of newspaper space devoted to advertising has been increasing steadily

This surprising decline demanded closer examination of the pre-riot data. Inspection of figures 1 and 2 revealed a certain amount of news about Negroes around the turn of the century (most of it quite racist in genre, as will be seen), at a time when there were relatively few Negroes in the West. Even this minimal coverage appears to have dropped off during the long period surrounding the two world wars, until an upturn in the late 1950s. However, this late increase came considerably after the
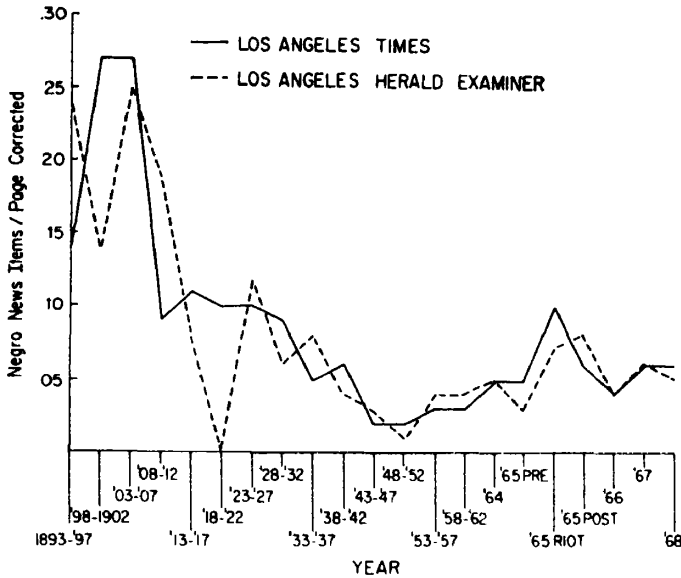
FIG. 4.—News items per page referring to Negroes, corrected for proportion of Negroes in Los Angeles.

upsurge in the local black population, and never really caught up with it, as may be seen in figures 3 and 4.

This suggested testing for a U-shaped curve of press coverage over the years prior to the riot, from 1893 to 1965. And indeed, both of our measures of press attention yielded a significant U-shaped (quadratic) relationship between press coverage and time over the sample period, on each

over the years, from a low of 26 percent in 1893 to a high of 59 percent in 1967. If we were to consider the total newspaper as the reader sees it, the decrease in per capita coverage of blacks would thus be even more dramatic. The finding that newspaper coverage of black Americans did not increase until just before the Watts riot relative to northern Negro population growth was also obtained in the two relevant prior studies. Simpson (1936) found that per capita news space devoted to Negroes in Philadelphia declined from the early part of the century to the 1920s and 1930s. Kassarjian (1970) reports no general increase in the use of Negroes in advertising in eleven national magazines across the years 1946, 1956, and 1965, but a substantial increase by 1969.

newspaper. This remained, though not as strongly, even when press coverage was corrected for the increase in the local Negro population.[10] Hence, after a half-century-long period of real invisibility—from the turn of the century to the postwar period—press coverage of blacks appears to have begun increasing, if very slightly, even before the riot.

Nevertheless, one should not imagine that this late upturn was simply the culmination of a long linear increase in sympathy and attention to Negroes. This was not the case at all. First, the gap between the number of Negroes in Los Angeles and the press attention they received was actually widening with time, as already indicated. Second, press coverage increased only in the last few months before the riot, not during the previous decade of intensive civil rights activity. The civil rights decade (1953–62) did not differ significantly (by t-test) from the postwar decade (1943–52) in corrected news space or news items, whereas the last few months before the riot (1964–65) showed slightly (but significantly) more press attention than in the postwar period.

In short, the press had increasingly contributed to black invisibility for more than a half century, failing to redress it even when civil rights activism became commonplace across the country. Only in the last few months before the riot did press coverage begin to increase, and even then not very dramatically.

Content of Press Coverage

Perhaps it is just as well that press coverage of blacks was so rare for so many years, because the content of it was mostly degrading. Table 1 presents the historical trends in the content of news items dealing with Negroes. Initially, the press largely recorded acts of crime and other such sensational, "yellow-journalism" news, in addition to accounts of atrocities committed upon blacks.

Between the two world wars, some Negroes became quite prominent in the entertainment world, and increasingly were given press attention in this role. Crime, sensationalism, and acts of interracial violence were less commonly reported. However, during the interwar period, only a slim percentage of the total news about Negroes was given to his struggle for equality (17 percent).

[10] The statistical significance of the U-shaped effect of time on pre-riot press coverage is as follows: (1) percentage space—*Times*: $F = 46.51$, 1/98 df, $P < .001$; *Herald-Examiner*—$F = 11.91$, 1/23 df, $P < .005$; (2) for news items per page—*Times*: $F = 33.64$, 1/98 df, $P < .001$; *Herald-Examiner*: $F = 9.88$, 1/31 df, $P < .01$. Correcting for Negro proportion of Los Angeles residents yields the following significance levels for the same four comparisons: $F = 5.79$, 1/98 df, $P < .05$; $F = 8.39$, 1/23 df, $P < .01$; $F = 4.61$, 1/98 df, $P < .05$; $F = 10.22$, 1/31 df, $P < .005$. The F-ratios are the quadratic components of the influence of years on press coverage, by analysis of variance.

In the period from World War II to the Watts riot, coverage of antisocial and sensational news diminished almost to the vanishing point. From absorbing 35 percent of Negro press coverage prior to 1920, such coverage drew only 4 percent in the late 1950s and early 1960s. Entertainment remained an important focus of attention, but appeared to be on the wane.

The most important postwar change, of course, was the increased attention given to civil rights efforts of all kinds. From the low point of 17 percent in the 1920s and 1930s, it rose to 47 percent in the late 1950s and

TABLE 1

CONTENT OF NEGRO NEWS ITEMS FOR COMBINED LOS ANGELES NEWSPAPERS (PERCENTAGES)

Categories	1892–1919	1920–39	1940–54	1954–65 (Pre-riot)	1965–66 (Post-riot)
Stereotypic	43	52	29	21	17
Antisocial	*20*	*16*	*5*	*2*	*3*
Sensational	*15*	*9*	*0*	*2*	*3*
Entertainment	*8*	*27*	*24*	*17*	*11*
Civil Rights	23	17	35	47	46
Positive steps	*6*	*1*	*4*	*17*	*18*
Negative steps	*3*	*1*	*2*	*7*	*9*
Ambivalent or neutral	*14*	*15*	*29*	*23*	*19*
Interracial Violence	13	1	4	6	19
Other	21	30	32	26	18
Everyday Life	*9*	*3*	*7*	*5*	*3*
International	*4*	*6*	*9*	*16*	*9*
Miscellaneous	*8*	*21*	*16*	*5*	*6*
Total number of items	100% (174)	100% (158)	100% (46)	100% (538)	100% (442)

NOTE.—Percentages are based on the total number of items for both newspapers, weighting the *Times* somewhat more heavily due to its larger sample.

early 1960s. However, it must be remembered that until just prior to the riot, this still represented an unimportant focus of attention. As shown in figure 1, only about 2 percent of the total news space was devoted to Negroes in the late 1950s; though civil rights efforts received almost half of that, they still occupied a minor and relatively obscure niche in the news of the time.

These trends in content, like those in the total amount of Negro news, did not merely reflect the editorial whims of one newspaper or newspaper chain. Table 2 illustrates the parallel development of these trends in both the *Times* and the *Herald-Examiner*. The main difference between the two papers was that the *Herald-Examiner* was slower to increase coverage of civil rights than the *Times*. In the *Times* the change occurred in the

period from 1940 to 1954. The parallel increase in civil rights coverage in the *Herald Examiner* occurred only in the period after 1954.

Blacks' Attitudes toward the Media

The bias of the white-owned press did not go unnoticed in the black community. Table 3 presents data on the black sample's evaluations of the fairness of media coverage of the black community. Large minorities of the black community felt the two major newspapers treated the Negro community unfairly, and somewhat smaller numbers felt the same way about the electronic media. In fact, the *Times*, then highly conservative,

TABLE 2

COMPARISON OF CONTENT OF NEGRO NEWS ITEMS IN *Times* AND *Herald-Examiner* (PERCENTAGES)

	1892–1919	1920–39	1940–54	1954–65 (Pre-Riot)	1965–66 (Post-Riot)
Stereotypic:					
Times	44	52	17	19	17
Herald-Examiner	34	52	50	30	17
Civil Rights:					
Times	21	18	45	51	49
Herald-Examiner	33	14	19	35	38
Interracial Violence:					
Times	15	1	3	5	19
Herald-Examiner	4	0	6	7	17
Other:					
Times	20	29	35	25	15
Herald-Examiner	29	34	25	28	28

TABLE 3

BLACK RESPONDENTS' EVALUATIONS OF LOCAL MEDIA'S COVERAGE OF THE NEGRO COMMUNITY (PERCENTAGES)

Media	Fairly	Unfairly	Other	Net Affect
Community-wide:				
Los Angeles *Times*	38	44	18	−6
Los Angeles *Herald-Examiner*	54	31	15	+23
Television in general	63	29	8	+34
Radio in general	64	26	10	+38
Negro-oriented:				
Los Angeles *Herald-Dispatch*	35	17	48	+18
Los Angeles *Sentinel*	48	6	46	+42
KGFJ	76	7	17	+69

NOTE.—The specific question was, "How fairly do the following cover the problems of the Negro community?" "Net affect" is computed by subtracting the "unfair" proportion from "fair." The *N* for each row is 586. Most of the "other" responses are "don't know"; "no answer," and "other" contribute smaller amounts.

was more often thought unfair than fair. This was a harsh indictment of the major community newspapers. By comparison, black respondents were considerably more favorable to most other white-dominated institutions and white politicians (Sears 1969), and much more positive to the two local Negro newspapers and a local radio station catering primarily to a black audience, as shown in table 3. In these cases, criticism was rare.

POST-RIOT VISIBILITY

The black community emerged from the violence interpreting the riot as an attempt to call attention to, and to redress, a series of legitimate grievances. Police brutality, merchant exploitation, racial discrimination, poor service in public agencies, deteriorating housing—all were perceived as longstanding ills that whites had been able to ignore until the riot forcefully made them take notice. The growth and development of this ideology about the riot, and the pivotal role of attention-seeking in it, have been examined in detail elsewhere (Tomlinson 1968; Sears and Tomlinson 1968; Sears and McConahay 1970, pp. 413–79). Here we wish to examine whether or not whites responded as the blacks' riot ideology hoped they would. That is, had the difficult social conditions existing in the Los Angeles ghetto suddenly and forcefully been brought to their attention? Was there an attentive and sympathetic response to the riot among whites? And did they emerge from the disaster with the resolve to try to redress the legitimate grievances of the black population?

Amount of Press Coverage

Press attention, at least, apparently did *not* increase after the riot, surprisingly enough. The T-tests comparing the pre-riot 1964 and 1965 papers with the post-riot papers from 1965 through 1968 yielded no significant differences for either the *Times* or the *Herald-Examiner* on any of the four measures used above—the percentage of news space devoted to Negroes, the number of news items referring to Negroes per page, or either of these corrected for the percentage of Negroes in the city of Los Angeles.

Instead, post-riot newspaper coverage, like pre-riot coverage, continued well below the proportion of blacks in the population, as shown in figures 1–4. In fact, coverage was significantly below the population proportion at all but two points; when confidence intervals are set up around the census proportion of blacks in Los Angeles for every year from 1964 to 1968, black coverage in all but the 1965 post-riot *Times* and the 1967 *Herald-Examiner* was significantly ($P < .05$) below the population proportion of Negroes. Thus, even after the riot, there was little evidence

that the Negro population was receiving its "fair share" of press attention, despite the near-crisis nature of race relations.

Content of Press Coverage

The content of post-riot press coverage similarly reflected no greater sympathetic attention to black grievances from whites. As shown in table 1, attention to civil rights—whether positive or negative—remained about the same. Post-riot coverage did include considerably more attention to interracial violence, of course, mainly due to discussions of the riot. Combined with slight increases in other unfavorable categories (Antisocial, Sensational, and Negative Steps in Civil Rights), unfavorable references rose from 15 percent before the riot to 34 percent afterward. Since there was actually a decrease in the several favorable categories (Entertainment, Positive Steps in Civil Rights, Everyday Life), the net outcome of the riot was a significant increase in unfavorable content ($X^2 = 4.02$, 1 df, $P < .05$). Again these results are very similar for the two newspapers, as shown in table 2. Thus, the press reaction to the riot fulfilled neither of the hopeful expectations of the black community—attention did not increase, and sympathy actually decreased.

Public Response of the White Community

The white community as a whole also failed to respond attentively and sympathetically. The public statements of local white civic and government officials immediately blamed the violence upon a rich variety of deviant, hostile, and pathetic types—especially civil rights agitators, criminals, and recent migrants from the South. The mayor wrote police brutality charges off to "Communists, dupes, and demagogues." The police chief, William Parker, pictured the rioting as "the result of a rebellion of a gang of Negro hoodlums who had no real purpose except rebellion and destruction" and blamed "malcontents who had dragged ghosts here with reports about Bogalusa and Americus, which is not the situation here."[11]

This angry refusal to view the Negroes' problems sympathetically was also dominant in white public opinion at the "grass roots" level. Although both whites (79 percent) and blacks (84 percent) agreed that the riot made whites more aware of Negro problems, only 32 percent of the whites felt it made them more sympathetic to those problems. A majority of blacks (51 percent), on the other hand, expected whites to be more

[11] For a detailed treatment of the responses of white and black leaders on the local, state, and national level, as well as a more complete account of the causes and effects of the rioting, see Sears and McConahay (*The Politics of Violence* [Boston: Houghton Mifflin, forthcoming]).

sympathetic. Enormous differences separated the races with regard to perceptions of the riot's effects upon race relations. Among whites, there was a strong consensus that the riot increased the gap between the races (71 percent) and that it hurt the Negro's cause (75 percent). Vastly fewer blacks expected relations to deteriorate (23 percent and 24 percent, respectively). These data are discussed elsewhere more completely by Morris and Jeffries (1970, pp. 480–601) and Sears and Tomlinson (1968).

Thus, whites and blacks were agreed only in expecting greater white awareness of Negro problems. As we have seen, however, it appears that this was not fulfilled in great measure. While press coverage is an indirect measure of white awareness of, and attention to Negro problems, it does suggest that the immediate close attention to the black community stimulated by the actual events of the riot was short-lived, and that subsequently press coverage of the black community returned to "normal." The white community appears to have been able to sweep the problems of the large black minority back under the rug.

CURRENT VISIBILITY

How does the situation now stand? Has press coverage of Negro news increased reliably since 1893? Figures 1 and 2 indeed show increases both in space devoted to Negroes and in the number of news items concerned with them. In fact, the increase (i.e., the linear component of the analysis of variance) is significant for the space index for both the *Times* ($F = 103.65$, 1/118 df, $P < .001$) and the *Herald-Examiner* ($F = 12.40$, 1/32 df, $P < .005$), and also for the number of news items per page in each paper ($F = 59.89$, 1/118 df, $P < .001$ and $F = 6.53$, 1/51 df, $P < .025$, respectively). This would seem to reflect a genuine reduction in the black man's invisibility in this century.

However, this increase in press attention has, at best, merely paralleled the local Negro population growth; it does not represent more balanced coverage of the races. Figure 3 shows that blacks consistently have received only about 20 percent of the news space that would be expected from the size of the local black population. It also shows that the increase in press coverage from 1893 to 1968 merely compensated for the increase in the size of the local black community, rather than revealing any greater attention to the black community for its own sake. An analysis of variance on the news space index, corrected for the proportion of Negroes in Los Angeles, yielded no significant increase with time (i.e., no significant linear trend) in either newspaper. Applying the same analysis to our other index—the number of news items concerning Negroes—reveals a significant *decrease* in press attention to Negroes since 1893 in both newspapers, as shown in figure 3 (*Times:* $F = 22.15$, 1/118 df,

$P < .001$; *Herald-Examiner:* $F = 47.13$, 1/51 df, $P < .001$). The two newspapers again parallel each other on each index, adding substantial credibility to these findings.

Despite this continued low level of attention, however, the content of press references to blacks has changed dramatically. The era between the world wars was the high-water mark of relatively stable and conflict-free relegation of Negroes to a stereotyped lower-caste position. Highly restrictive Jim Crow practices were the unchallenged rule in the South, and collective civil rights efforts were rare. Thus, the content of Negro press coverage tended to support the status quo, rarely presenting efforts to change it.

This is no longer true. Most notably, the proportion of news items depicting Negroes in stereotyped lower-caste roles has dropped dramatically. From 1920 to 1939, a majority (52 percent) of Negro items fell in the Antisocial, Sensational, and Entertainment categories. After the riot, only 17 percent did, as shown in table 1.[12] In contrast, items describing conflicts over the Negro's lower-caste position have become dominant. Negroes' grievances with their status, and efforts to redress them, categorized as "Civil Rights" items, almost tripled from the interwar to post-riot periods, from 17 percent to 46 percent. Inclusion of incidents of interracial violence—the most extreme form of racial conflict—makes the increase even more dramatic: from 18 percent to 65 percent.

DISCUSSION AND CONCLUSIONS

The main findings of the study were these:

1. The invisibility of blacks in Los Angeles was indicated by the rarity of whites' contact with blacks in their normal lives, and the low level of press coverage of blacks throughout the period sampled. Moreover, press coverage of blacks did not significantly increase from 1893 to 1968, relative to the growth of the black population in Los Angeles. The content of

[12] This drop in stereotyped reporting of Negroes has also been obtained in previous studies. Bryant (1935) found that almost all (84 percent) the Negro news in 1922 and 1932 Texas papers was of antisocial events, and Gist (1932) reports that 47 percent of the Negro space in seventeen major U. S. papers during the early 1930s was antisocial. Simpson (1936) found that sensational news, especially crime, constituted the majority of the Philadelphia Negro news from 1908 to 1932. The percentage of Negro crime news increased from 46 percent of the Negro news in the period 1908–18, to 53 percent in the 1920s, and decreased to 35 percent in the 1930s. He concluded, "The most common attitude in Philadelphia is one of indifference to Negroes unless a Negro commits an especially 'bad' crime or interferes in some way with the white man's peace of mind" (p. 118). Kassarjian (1970) reports that, in ads presenting American Negroes, stereotyped menial depictions decreased sharply from 1946 to 1969. However, the main increases were in entertainment, sports, and high fashion models, with lesser increases in depictions of Negroes as white-collar workers and professionals.

he press coverage of blacks did change sharply, however, from emphasis n unflattering stereotypes to concentration on racial conflict.

2. Black invisibility had not been diminishing substantially before the Vatts riot. Press coverage of blacks actually decreased from 1893 to 1965 elative to the number of Negroes in Los Angeles, except for the last few nonths before the riot.

3. Blacks tended to regard the riot as an effort to overcome invisibil-ty, by attracting whites' sympathetic attention to their legitimate rievances. However, black visibility did not increase after the riot—at east not as measured by press coverage of the black population. And ress content did not reveal a significant increase of emphasis on black rievances following the riot. The trend set in motion in the 1950s—to ncrease the coverage of racial conflict—continued, but the press tended o reflect the interpretation of the riot expressed by white public officials nd white public opinion. Local officials responded to the riot primarily s a threat to the public safety, rather than as a symptom of serious roblems demanding attention. The white public felt the riot would re-ult in less sympathetic treatment of the black community.

The most compelling single finding of the content analysis is that press overage of blacks has been so slight throughout the entire twentieth entury. The Kerner Commission's observation that "our nation is mov-ng toward two societies, one black, one white—separate and unequal" *Report of the National Advisory Commission on Civil Disorders* [1968, . 1]) perhaps somewhat overdramatizes the more sobering truth, that lack and white America have *always* been separate and that nothing bout that is really changing at all. The black ghettos have unswervingly nsulated whites from physical and social contact with blacks, and the reoccupation of the white press with white news has prevented whites rom gaining even symbolic and vicarious knowledge of blacks. More-ver, the rise in civil rights litigation, in Negro political activism, in black niltancy, and even the riots have not increased per capita press coverage f blacks in Los Angeles. If anything, the gap is widening between the ize of the black population and the attention given it by whites.

There are a number of important implications of this continuing pat-ern of black invisibility, particularly considering content changes in the 'image" of the black population presented to whites. Four seem particu-arly important to us.

First, black invisibility has badly confused whites' understanding of acism. Everyone understands individual acts of bigotry and legalized egregation, as traditionally practiced in the south, and almost all north-rn whites oppose them quite comfortably (Sears and Kinder 1970; heatsley 1966). Yet this sins-of-commission model only confuses whites' nderstanding of northern sins-of-omission. Northern whites cannot see

"white racism" in their own attitudes and behavior, because for the most part their actions do not even remotely resemble their image of the crude red-neck racism of the overt southern bigot. Thus, they simply reject the notion that they contribute to racism (e.g., one recent poll found that only 31 percent of a national white sample agreed with the Kerner Commission in blaming "white racism" for racial conflicts [CBS News 1968]).

Racial oppression now comes more often from the indifference and inattention of apparently polite and well-meaning whites than from naked bigotry. Blacks as persons, and their grievances, are too easily put out of mind. Preoccupied with their own interests, even the most liberal of whites have been easily distracted from the faint signals emanating from the isolated ghetto.

Similarly, the press has not been anti-black in recent times as much as it has been more concerned with whites. It is an institution controlled by white society for the convenience and needs of whites, and thus often to the exclusion of blacks. By helping to perpetuate black invisibility, however, it both embodies institutional racism and fails to combat the white public's ignorance about it (Carmichael and Hamilton 1967).

A second implication is more ominous. There is some suggestive evidence that black invisibility has actually facilitated the exploitation of black people by whites. Experimental studies have consistently shown that the tendency to harm, exploit, or take advantage of others is reduced by greater information about them, or by greater physical and psychological proximity to them (Lewicki 1969; Milgram 1965, pp. 243–62). Even when a subject perceives the target person as very different from himself (as is obviously the case for most white people viewing blacks in our society), greater knowledge about the target person reduces exploitation of him (Lewicki 1969). Certainly, retribution against villains can be openly countenanced by all. Beyond that, it may be that inhumanity depends upon the invisibility of the victim.

Third, there has been much speculation about improvements in blacks' self-images arising from the riots. And, indeed, the riots did represent a level of collective retaliation against an oppressive social system that was unparalleled in the history of the American Negro. Yet much earlier improvements in the image of the black man are unmistakable in the changes in press coverage of the Negro through this century. Around the turn of the century, the Negro was pictured as impulsively and ineffectually criminal, and when not criminal, given to great silliness and bizarre habits. Between the wars, the Negro as an entertainer became more prominent, but still not in high-status roles. Press coverage of black entertainers mainly promoted uncomplimentary stereotypes of Negroes acting as tap dancers or in such roles as Rochester and Amos and Andy.

After World War II, however, the social activist began to receive much increased attention.

One can speculate that this change, which long antedated either the riots or the rise of black militancy as it is known today, began the difficult process of changing the public image of the black man among both whites and blacks. This may be one reason why blacks in their thirties and forties today differ surprisingly little in militancy and politicization from their younger brethren (Campbell and Schuman 1968, pp. 1–67; Sears 1969; Sears and McConahay 1970, pp. 413–79). Perhaps the resocialization of the previously apolitical black population to more activist norms has been proceeding longer than commonly recognized. Improvements in "black identity" today may reflect the modest publicity about the integrationist labors of the 1940s and 1950s, as well as the riots and militancy of the 1960s.

However, this change in media content bears with it the potential for badly frightening a white population that is quite naïve and inexperienced about blacks (Sears and Kinder 1970). Press attention to the black community today is primarily devoted to its conflicts with the broader society, with its unhappiness with the status quo, and with its efforts to overturn it. Thus, in earlier days whites must have rested more comfortably with their ignorance of the black world, assuming that blacks really preferred the status quo. Today the conflict is much more apparent, even if the white majority continues to try to protect itself from it by indifference and inattention. And the violence of the riots has served as the justification for further inattention and inaction, and for added repression. Indeed, the riots gave body to whites' fears of a rebellious black population, just as Negro crime had earlier in the century. There are many signs that black invisibility is once again becoming a serious problem, now that the mass riots seem to be receding into the past. Racial isolation is not markedly decreasing. Our data indicate that the increased visibility in media news coverage induced by the riots was only a temporary phenomenon. Further, increased attention to ecology, women, and other new causes, however legitimate, helps to again shunt the blacks into the back pages of newspapers and the minds of white America. With the reemergence of black invisibility as a serious and chronic problem in American race relations, blacks' needs, and even their demands, may again be heard only indistinctly throughout most of white America.

Thus, finally, what changes in press coverage might help race relations? The obvious suggestion is that simply increasing coverage would help overcome black invisibility, and thus improve race relations. However, this would not necessarily have the desired result in itself. Increases in the volume of press coverage must also be accompanied with a change

in its content. As we have seen, the considerable coverage of racial news around the turn of the century did not have a leavening effect upon race relations, because of its stereotypic nature. A similar problem exists today with "formula reporting." Hodding Carter (1968, pp. 38–41) has described the formulas used to report events concerning blacks in the 1950s, such as the cruel Southern sheriff mistreating the poor Negro, and currently, as the black militants and nationwide conspiracies disrupting the peace of civilized society. Anything that happens with Negroes tends to be reported in these terms; increased coverage of this sort would obviously only exacerbate whites' already great racial anxieties. The problem is that such material is all that is currently considered "newsworthy." It is evident that such formula reporting would have to be abandoned in favor of more representative treatment of blacks before increased coverage could help reduce racism, or even reduce institutionalized racism in the communications industry.[13]

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[13] We have not necessarily assumed that the press is "racist"—in the sense that it deliberately suppresses news about blacks—or that the press is any more responsible for black invisibility than the rest of the white population. Indeed, the lack of coverage of blacks could simply be due to the lack of "newsworthy" black news. As David Seidman has pointed out to us, powerless people in general (black or white) are conventionally regarded as not very "newsworthy," but that should not itself be taken as an indication of a *racial* bias in the press. What is needed, perhaps, is an examination of the class bias in the press as well as the racial bias. In any event, our main interest here has been in documenting the fact and extent of black invisibility, and in examining its consequences, rather than in trying to determine its causes.

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Skin Color, Status, and Mate Selection[1]

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Data from a sample of 350 Negro married couples in Washington, D.C., are analyzed to examine the changing relationship between status attributes, mate selection, and skin color, by comparison of duration-of-marriage cohorts. We find that the traditional status advantage of light-skinned women holds for all cohorts, with little indication of change. For men, on the other hand, darker-skinned men experienced better status and mate-selection opportunities in more recent cohorts than in earlier ones. The higher job-mobility orientation of dark-skinned men evidently explains their improved mobility. These findings suggest a change in the evaluation of differential skin color for men within the Negro community.

James Baldwin (1955, p. 68) says, "It is part of the price the Negro pays for his position in that society that . . . he is almost always acting." This implies that playing the role of "Negro" requires the Negro to behave in ways that are inconsistent with his concept of himself, as others have observed. Yet if there were no effects of the role one plays upon the self-concept, American Negroes would not bear the "mark of oppression," and sociologists would have long since lost interest in role theory. But Pettigrew (1967), after acknowledging Baldwin's point, remarks:

> Both Whites and Negroes confuse their own roles as being an essential part of themselves. . . . A large body of psychological research convincingly demonstrates the power of role-playing to change deeply-held attitudes, values, and even conceptions of self. Moreover, these remarkable changes have been rendered by temporary role adoptions of an exceedingly trivial nature when compared to the life-long role of "Negro." Imagine, then, the depth of the effects of having to play a role which has such vast personal and social significance that it influences virtually all aspects of daily living. Indeed, the resulting confusion of self-identity and lowering of self-esteem are two of the most serious "marks of oppression" upon Negro American personality. [Pp. 151–52]

Whether one approaches the problem from role theory with Pettigrew or from a psychodynamic perspective with Kardiner and Ovesey (1951, pp. 303–4), constant playing of the Negro role has produced a damaged self-concept, one of low self-esteem and self-contempt.

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Among the most clear-cut aspects of this process is the well-documented negative evaluation of skin pigmentation by Negroes. Several decades of research have demonstrated that Negroes themselves have defined dark skin as undesirable and light skin as desirable. This scale of values has formed the basis for judging the attractiveness of others as well as a determinant of self-esteem (Dollard 1957; Drake and Cayton 1962; Kardiner and Ovesey 1964; Warner, Junker, and Adams 1941). Case history material on the Negro family contains numerous observations of children with light skin receiving preferential treatment from their own parents (Dollard 1957; Drake and Cayton 1962; Kardiner and Ovesey 1964; Warner et al. 1941). Negro periodicals have long contained advertisements for skin lighteners. Kardiner and Ovesey (1951, p. 253) report the pathetic case of a mother who used a daily bleach bath on her dark-skinned child. The presence of skin color attitudes can be observed in Negro children as young as four years old (Asher and Allen 1969; Clark 1963; Clark and Clark 1947; Goodman 1964; Landreth and Johnson 1953; Morland 1958; Mussen 1953; Stevenson and Stewart 1958; Trager and Yarrow 1952). Herndon (1969) remarks how these evaluations dominate interaction among the Negro high school children he observed in the 1950s:

> Every common derisive word, all the abusive nicknames, nouns, and adjectives, all the big-lip, liver-lips, burr-heads, fuzzy-heads, kinky-haired, nappy-headed, big-leg high-ass, apes, monkeys, and too-blacks were dragged out daily and heaped on each other casually or furiously, continually and fanatically. The focal point of all this was the head and color of skin, and the point was ugliness. Nose, lips, hair, all counted, but nothing else could produce the real anger of a kid being called black. [P. 69]

All studies are consistent in finding that, in comparison with their blacker brothers, light-skinned Negroes are more likely to be in higher socioeconomic strata, are more likely to experience status advancement, and are preferred as marriage partners (Davis, Gardner, and Gardner 1965; Dollard 1957; Drake and Cayton 1962; Edwards 1959; Frazier 1940; Frazier 1966; Freeman et al. 1966; Warner et al. 1941).

The importance of skin color as a status determinant has been declining, according to the nearly unanimous opinion of recent observers (Davis et al. 1965; Drake and Cayton 1962; Frazier 1940; Glenn 1963). To our knowledge, no one has published any systematic evidence of this decline, and in one recent paper Freeman et al. (1966) concluded that marriage patterns by skin color have not changed recently. Recent writers have offered the material for explanation: during the period of racial activism, Negroes have rejected the old role of "Negro" and are inventing a new role for themselves which departs radically from the acceptance of inferiority. With the new role comes a new self-concept.

The entire movement for the serious study of "black culture," and the glorification of social and biological characteristics peculiar to Negroes (Lincoln 1961), can be seen as an explicit fashioning of a new self-concept consistent with the new behavior.

The suggestions of decline in importance of skin color are not a phenomenon of the late sixties. Edwards (1959) reported over a decade ago that there were at that time observable changes in skin color distributions between older and younger Negro professionals. As early as 1963, at a conference to study the Negro self-concept, Negro observers were suggesting that research on the influence of color on personality completed twenty or more years before "might be quite wrong in the context of today's sit-ins, marches, wake-ins, picketings, and so forth" (Kvaraceus et al. 1965, p. 43). One Negro leader was quoted at that time as saying, "It is interesting to note that all the major leaders among Negroes today tend to be quite Negroid in appearance. In fact, my black skin has a great value among Negroes today. I do remember a time when being as black as I am did not have much value, but today it is different" (Kvaraceus et al. 1965, p. 43). If this observer is typical, then black really is beautiful, and rather than looking for a disappearance of the relationship between skin color and status, we might well look for a *reversal* of the relationship. Others at that conference were not so sanguine about the future, concluding that "unfortunately it hardly seems possible that a reversal of the value system will occur for many, and certainly not for a long time to come" (Kvaraceus et al. 1965, p. 16).

The present paper presents data to examine the trend of relationships between skin color, status attributes, and mate selection. This examination has been guided by the conservative hypothesis that the older relationship has been declining.[2] The basic structure of our argument is that the Negro struggle to escape from inferior status is accompanied by a change in the evaluation of differential skin color within the Negro community, which will change self-concepts and social judgments and eventually make skin color irrelevant to status placement and mate selection.

METHOD

From the birth certificates of the District of Columbia for the year beginning July 1, 1965, a sample stratified on the basis of social class as

[2] It would be technically inaccurate to state that we were testing this hypothesis at the outset of our study. The data were originally gathered for another purpose. Furthermore, we began this analysis with a different hypothesis in mind, specifically, that status and skin color are related, and therefore we were ignoring the time element. However, when finding distributions which lacked linearity, we began looking at the time element to see if it would clarify the relationships. The data we present here represent the product of the process designed to provide clarity and focus to our earlier analyses.

indicated by the father's occupation was drawn, and interviews with 1,700 of the mothers were obtained. From these interviews a sample stratified on the basis of social class and social mobility was drawn, and interviews were completed with 350 of the husbands. The data reported here are for the couples in which complete information was obtained from both spouses.

Negro females interviewed the wives, and Negro males interviewed the husbands a month or more later. Skin color of the respondent was rated by the interviewer on a five-point scale ranging from "very light" to "black." Skin color was judged from the face; no color chart was provided. We assume that a genetically accurate estimate was unnecessary since the operation of skin color as a determinant of life chances is presumably through its perception in social situations, and this method most accurately approximates the perception of skin color in the social setting.[3] Husbands' and fathers' occupations were coded on a seven-position Warner-type scale (Warner, Meeker, and Eells 1949, pp. 136–38, 140–41) and, for some analyses, collapsed into middle and lower class. For some analyses a person is considered socially mobile if his present class differs from that of his household head when the respondent was age ten to fourteen. For other analyses, mobility was arranged on a thirteen-point scale, ranging from one (six positions downward) through seven (no change) to thirteen (six positions upward), using the seven-position occupational placement.

We have assumed that educational, occupational, and mate-selection decisions are made at approximately the same age for different age cohorts. Since mate selection and status are conceptually linked for females, we have selected comparisons of successive marriage cohorts as the only available and uniformly applicable reflection of changes over time. We established four years-of-marriage categories for some analyses: one to two, three to five, six to eight, and nine or more;[4] this yielded a total of about 65 cases in both the first and third categories, and 105 in each of the other categories. For some analyses we were required to collapse the data into categories representing less than six and six or more years of marriage. The earlier married groups were mostly in their thirties (mean age was thirty-five for men, thirty-one for women). They were of

[3] To assess reliability, a second interview was conducted with a random sample of forty-six of the female respondents. The first and second interviews were always conducted by different interviewers. The product-moment correlation coefficient between skin color ratings made during the two interviews was .78, $p < .001$.

[4] We do not have data on ages for occupational and educational decisions, but we do know that the mean age at marriage is the same for those married less than six years (20.58 for women, 24.75 for men) and those married six years or more (20.24 for women, 24.52 for men). In the total sample the correlation between age and duration of marriage was .68 for men, .77 for women.

high school age during the 1940s and early 1950s. The more recently married groups were mostly in their twenties (mean age was twenty-eight for men, twenty-four for women), of high school age during the big days of the civil rights movement in the 1950s. The group married earlier was already adult when these events occurred; half were married by 1955. One might expect that heightened racial consciousness would have influenced the recently married group in time to have an effect on educational, occupational, and mate-selection decisions, while the earlier married group may have been exposed to these influences too late for it to have had an impact on many status-relevant decisions. The fact remains, however, that we are testing longitudinal hypotheses from data which are cross-sectional.

Individual cases in the sample were weighted with the reciprocals of the sampling fractions in order to compensate for the biases introduced by unequal sampling ratios.

This study has several limitations which must be recognized when viewing the findings. First, it includes people in only one city who are parents of a recent birth event and married and living together. It thus omits those who are unmarried or in broken marriages, and overrepresents the fertile. Second, the completion rate was about two out of three.[5] Third, in order to get a sufficient number of middle-class respondents, and upwardly and downwardly mobile respondents, widely disparate sampling rates had to be used. This introduces problems in estimating variance for significance tests, for it is clear that when a parameter calculation contains some cases which are entered a number of times, the variance is less than had that many cases actually been interviewed and the data for each entered.[6] Solutions for this problem have not been published. Many other researchers have either not recognized the problem or ignored it. Finally, as mentioned above, a longi-

[5] To see if the total female sample (all 1,700 women interviewed) was biased with respect to certain variables, we compared the interviewed cases with the entire population on ten variables included on the vital certificates: sex of baby, gestation, month of delivery, census tract of residence, age of mother, legitimacy status, number of children, number of children born alive, total number of pregnancies, and birth weight. There were no substantial differences between the samples and the population for any of these comparisons. We also prepared correlation matrices relating each of the ten variables with each other within the interviewed samples and the total population. The values obtained for the interviewed cases and the population were similar. We concluded that the larger sample is representative of the total population with respect to these ten variables. This does not mean, however, that this is true for the smaller number of women used in this analysis, their husbands, or for other variables.

[6] This inflates significance tests by a small but unknown amount. We know our estimates of other parameters are unbiased, but our probability of finding significant differences is spuriously increased. Inflation also increases the probability of achieving statistical significance by virtue of increase in numbers. To guard against achieving significance due to this, the actual number of cases interviewed rather than the weighted totals were entered into the calculation of tests of significance.

tudinal design would have been desirable for testing the hypothesis, and the extent to which the cohort analysis actually represents changes over time is dependent upon the assumptions which we made.

FINDINGS FOR MEN

Since examination of contingency tables revealed that not all of our relationships were linear, we calculated η's on the relationships between male skin color and several status variables using four marital duration categories. Table 1 presents the η values. (Negative signs mean dark skin is a disadvantage.) Examination of the η values indicates that for each variable for each subsequent marital duration category there is a shift away from dark skin being disadvantaged, until in the shortest duration category the dark-skinned men are at an advantage. For the sixteen η values

TABLE 1

η VALUES FOR RELATIONSHIPS BETWEEN DARKNESS OF MALE SKIN COLOR AND SELECTED STATUS VARIABLES, BY YEARS OF MARRIAGE

Years Married	Husband Education	Wife Education	Wife Skin Color	Husband Mobility
1–2 . . .	+ 55	+.26	27	+ 61
3–5. . .	+ 54	+ 54	35	+ 45
6–8.	.66	+.64	− 39	+ 48
9+ .	− 86	−.78	− 55	− 66

NOTE.—Signs have been placed on the η values to indicate direction of the relationship in those instances where it was obvious from inspection of the contingency tables

shown, the only exception to this statement is for the relationship between darkness of male skin color and skin color of spouses.[7] We will examine this special case in the last section.

We next examined the relationship between skin color and four status variables by contingency table analysis, this time introducing husband's occupation and family income. Table 2 presents the contingency coefficients, with negative signs indicating dark skin at a disadvantage. In every case, the two marital duration groups show opposite signs, are significantly different for the two time periods, and show dark-skinned men at an advantage in the recently married group.[8]

[7] We also performed standard Pearsonian correlation analysis of the relationships shown in table 1. For simplicity we have omitted tables showing these data, but they show exactly the same patterns as table 1.

[8] Because of our surprise at the reversal of the status relationship for men, and because skin color is related to age in the sample (more of the darker skinned are older), we examined the data using partial correlation. Controlling for age, for those married six or more years, darkness of skin color is negatively but not significantly related to mobility ($r_{12.3} = +.16$).

What accounts for the greater likelihood of the recently married dark-skinned men to be upwardly mobile? Are they now the recipients of positive discriminatory benefits? Has black pride made the darker-skinned men more ambitious? The interview schedule included a measure which bears on the last question: job-mobility orientation, or the extent to which the man was willing to sacrifice health, friends, family, and familiar surroundings to get a better job.[9] The data in table 3 show that

TABLE 2

CONTINGENCY COEFFICIENTS FOR THE RELATIONSHIPS BETWEEN DARKNESS OF MALE SKIN COLOR AND STATUS

Years Married	Husband Education	Wife Education	Husband Occupation	Family Income
1–5....	.093	+.225*	+.166	+.144
6+. ..	– 279*	– 116	–.157	–.312*

NOTE.—The number of cases on which the values are calculated ranges from 162 to 175. Skin color is collapsed into three categories: light (very light plus light), medium, and dark (dark plus black). Signs have been placed on the coefficients to indicate direction of the relationship in the instances where it was obvious from inspection of the contingency tables.

* χ^2 significant at $p < .05$.

TABLE 3

THE RELATIONSHIP BETWEEN MALE SKIN COLOR AND JOB MOBILITY ORIENTATION

Mobility Orientation	Skin Color*							
	Very Light		Light		Medium		Dark Plus Black	
	N[a]	%[b]	N	%	N	%	N	%
High........	5	10 3	30	40.0	84	50 5	51	73 8
Medium..... .	6	47 8	43	38 3	78	36.7	23	24 5
Low.	2	41.9	8	21.7	13	12 8	6	1 7
Total	13	100 0	81	100.0	175	100.0	80	100 0

[a] Number of cases interviewed.

[b] Percentages are derived from the inflated sample.

* $\chi^2 = 34.81$, $p < .001$. The Very Light and Light categories were collapsed for calculating χ^2

[9] The questions: "In order to get ahead, how much would it matter to you (1) if you had to take a job that might hurt your health, (2) if you had to take a job that caused you to be away from home overnight a lot, (3) if you had to move away from your friends, (4) if you had to move away from your relatives?" Responses were "would matter a lot," "would matter a little," and "wouldn't matter at all," scored 1, 2, and 3, respectively. The mean of the four scores was obtained for each respondent. The distribution of the means was divided at 1.5 and 2.0 to form three categories: low, medium, and high job-mobility orientation.

the darkest-skinned men are oriented toward making sacrifices to advance, with each progressively lighter-skin group less strongly oriented. For men married less than six years, the zero-order correlation between skin color and mobility is .17 ($p < .05$), but the partial correlation adjusted for mobility orientation is only .11 (N.S.). The minimal contribution of skin color to mobility when controlling for orientation is more obvious in table 4, the summary of analysis of variance for men married most recently. In a regression of mobility orientation on mobility, the added variance explained by including skin color in the model is negligible. Adding mobility orientation to a regression of skin color with mobility explains twice as much variation as skin color alone. From this analysis, we conclude that skin color makes a significant contribution to

TABLE 4

ANALYSIS OF VARIANCE: MALE SKIN COLOR AND MOBILITY ORIENTATION (INDEPENDENT VARIABLES) WITH INTERGENERATIONAL OCCUPATIONAL MOBILITY (DEPENDENT VARIABLE), FOR MEN MARRIED LESS THAN SIX YEARS

	df	SS	MS	F
Explained:	2	1,367.57	683 78	8.07**
By mobility orientation alone	1	1,198.18	.	.
By adding skin color	1	169.39	169 39	2 00
By skin color alone	1	448 19		.
By adding mobility orientation	1	919 38	919.38	10.85*
Unexplained	168	14,236.30	84.74	...
Total	170	15,603 87	.	.

* $p < .01$ ** $p < .001$.

mobility only through increasing mobility orientation. We reason that the mobility experience of recently married men with dark skins is due to the impact of increased racial pride upon their orientation toward achieving occupational mobility.

It is of interest to note that among men married six or more years, those with dark skins have relatively high mobility orientation ($r = .25$, $p < .01$), but they are not more likely than those with lighter skins to have experienced upward mobility ($r = .00$). The lack of a relationship between skin color and mobility in the presence of a relationship between skin color and mobility orientation suggests that racial pride also increased the mobility orientation of these men, but since status-relevant decisions were made prior to the heightening of racial pride, mobility orientation was not translated into mobility.[10]

[10] For those who may find the contingency relationship of skin color to mobility orientation too strong to be believed, and suspect relationships between it and other

An alternative explanation for our findings is based on the supposition that black-skinned Negroes have always known that they would have to work harder and sacrifice to get ahead. Perhaps they even brought up their dark-skinned sons to be more work oriented. During the recent period, more job opportunities have opened up for Negroes generally. When this occurred, it was the blackest who were already equipped with the psychological orientation which allowed them to move in on the new opportunities. This interpretation is in no way inconsistent with our data, and on that account it must be considered seriously. From any of the published materials relating skin color to personality, however, it is hard to see how one would predict that, even when "nothing has happened" on the race front, the blackest men would be the most ambitious,

TABLE 5

η VALUES FOR RELATIONSHIPS BETWEEN DARKNESS OF FEMALE SKIN COLOR AND SELECTED STATUS VARIABLES, BY YEARS OF MARRIAGE

	INDEPENDENT VARIABLE (WIFE'S SKIN COLOR)		
DEPENDENT VARIABLE (YEARS MARRIED)	Husband Education	Wife Education	Husband Mobility
1–2	−.53	− 47	− 53
3–5	− 43	− 47	− 52
6–8	− 77	−.55	−.35
9+	− 73	− 69	− 57

since there is unmistakable evidence of their poor chances for success. Until more evidence is available or until a more convincing theoretical support can be found for this argument, we prefer our first explanation.

FINDINGS FOR WOMEN

Analysis of the relationship between skin color of the wives and their status characteristics shows an entirely different pattern from that of the men. Table 5 presents η's between skin color and selected status characteristics for females by duration of marriage. (Negative signs mean dark is disadvantaged.) In the group married longest, the relationships look very much like those for men, with dark-skinned women suffering status disadvantage. But whereas in each subsequent male cohort the dark-skinned fared better, actually being at an advantage in the most recent cohort, between cohorts for the women the change is less dra-

variables, we offer the following additional selection of Pearsonian zero-order correlation coefficients between mobility orientation and selected other characteristics of all husbands: age, .05; education, −.07; present occupation, −.05; years married, −.04.

ıatic. Although there is a trend toward less educational disadvantage for elf and spouse for the dark-skinned women in recent cohorts, the disdvantage in obtaining an upwardly mobile husband remains constant.[11] t appears from the data presented that skin-color evaluation may have hanged slightly for women, removing some of the status disadvantage ʳhich dark-skinned women traditionally have experienced, but this disdvantage is still significant.

⁊ATE SELECTION BY SKIN COLOR

ʟ closer look at mate-selection patterns by skin color reveals the nature f the sex difference in the changed evaluation of skin color. We can xamine the strength of the relationship by examining the η's for the four

TABLE 6

DISTRIBUTION OF SKIN COLOR OF WIFE BY SKIN COLOR OF HUSBAND AND BY NUMBER OF YEARS MARRIED

ꞨKIN COLOR ⟩F HUSBAND	Light N*	Light %†	Medium N	Medium %	Dark N	Dark %	Total (%)
			Married Less Than Six Years				
ıght .	24	48 3	21	35.0	5	16 7	100 0
⁊edium...	18	12 5	53	71 8	15	15 7	100.0
⟩ark	16	40 4	15	40 7	5	18.9	100 0
			Married Six or More Years				
ıght .	24	68 3	14	11.0	3	20 7	100.0
⁊edium..	34	16.1	33	55 2	20	28 7	100 0
⟩ark ..	10	19 6	19	49 5	12	30.9	100.0

NOTE —Braces indicate percentages with statistically significant differences using z-test with < 01.

* Number of cases interviewed.

† Percentages are derived from the inflated sample.

ıarriage cohorts in table 1. The decline in the relationship between skin olor of spouses with each more recent marriage cohort is discernible. ʟ contingency table analysis (table 6) compares two marriage duration roups. For the longer-married group, lights overselect lights and underelect mediums and darks, and this is symmetrical by sex. The most nteresting difference in the recent cohort is the increased probability of ark men marrying light women. This points up the shift in status value f dark skin for men but not for women.

A contingency table analysis and a Pearsonian correlation analysis (not shown) ʳere also performed, with essentially identical results. It therefore appears extremely nlikely that the relationships shown in table 5 are a fortuitous accident of one type f analysis.

CONCLUSIONS

We have demonstrated that for this Negro, urban, married sample of recent parents, the relationship between skin color and status variables has not shown any important change in recent marriage cohorts of women, so that the traditional status advantage of light-skinned women has not significantly altered. For men in this sample, relationships between skin color and status attributes have shown a dramatic shift between recent marriage cohorts. Among those married since 1960, the blackest men fare better in status acquisition than those with lighter skin. The reverse is true for those married earlier. The dark-skinned men of whatever marital duration are far more likely to have high job-mobility orientation than light-skinned men. Furthermore, dark skin is only associated with status mobility through its relationship to high mobility orientation, and only for those married since 1960. For those with dark skin married earlier, job-mobility orientation appears only as a potential source of frustration. Our explanation of this finding is that racial pride makes the blackest the proudest and most motivated. If this motivation comes before a man has crossed all his status bridges, it can be converted into status assets.

In formulating our initial hypothesis we clearly underestimated the impact of the Negro struggle for racial equality on the skin-color attitudes and self-concepts of men in the Negro community surveyed, and therefore did not anticipate that a reversal of traditional findings could already have occurred. Our data strongly suggest that the trends in this new direction started at least as early as the late fifties and are therefore associated with the entire period of Negro activism. The current popular glorification of blackness and Negro characteristics generally appears in perspective as the continuation of this trend "on beyond zero," at least for men.

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Ability to Alter Skin Color: Some Implications for American Society[1]

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Sociocultural implications of man's forthcoming capacity to alter the color of human skin are explored. Current progress in understanding the mechanisms for lightening and darkening skin is reviewed, and future developments are suggested. Probabilities of reaction and acceptance of an alteration technology are examined in terms of "operational characteristics" (e.g., cost, permanence and speed of change, method of application), contemporary social reactions to "passing," traditional ideals of Negro appearance, the rise of militant perspectives, and the interplay of white and Negro reactions to an alteration technology. Reactions among whites to the availability of mechanisms for darkening skin are analyzed with regard to aesthetics (fashion) and ideological "reverse passing."

In light of advances in dermatology it has become pertinent to consider what the social consequences would be of an ability to change one's apparent race. Specifically, since social reaction to race often is determined by outward, visible manifestations, the effects of a capacity to alter at will the color of one's skin must be seriously examined.[2] It must be clear at the onset that this does not mean the application of superficial external dressings or stains to the skin but to controlled alterations of its color. In view of the importance that so much of the world attaches to skin color, it is mystifying how it should have escaped widespread attention that crude techniques to change skin color already exist and that these techniques are probably improvable. This paper reviews briefly the work that has been done before discussing possible social implications

DESCRIPTION OF BIOMEDICAL ADVANCES

The color of human skin can be changed by known methods. It can be made significantly lighter or darker, using different approaches. The alteration is very marked and quite dramatic: interested readers can

[1] Earlier versions of this paper were presented at the Seventh International Conference on Cell Pigmentation, Seattle, September 1969, and the Southern Sociological Society meetings, Atlanta, April 1970. I am indebted to Norval Glenn and Aaron Lerner for their helpful suggestions. Naturally the analysis and the conclusions remain my responsibility.

[2] The writings of John Howard Griffin (1960), who disguised himself as a Negro, provide excellent clues to the psychological effects of one form of color change. Recently, Grace Halsell has emerged from a similar journey (Halsell 1969), managed

examine several color photographs in Stolar (1963), Lasker (1968), and—if frogs suffice—Lerner (1961).

Skin *darkeners*, excluding stains, are of two types: those that stimulate the creation of melanin pigment and those that stimulate the tanning process from exposure to ultraviolet radiation. The drug psoralen will cause light skin to tan deep brown—strikingly dark—upon exposure to the sun or ultraviolet light. John Griffin used psoralen treatment prior to his experiences as a "Negro." Psoralen is sometimes used, in smaller doses, as a treatment for vitiligo, a skin disorder in which patches of skin turn dead-white, leaving the individual more or less disfigured by blotches of different color. Treatment of vitiligo has also played a role in the study of skin lightening.

A second technique for darkening skin uses a hormone known as MSH (for melanocyte-stimulating hormone) to stimulate the production of melanin in the skin.[3] The operation of MSH is still imperfectly understood, but it is clearly effective. MSH has now been synthesized, and in mass production its price would probably be modest. It can be applied only through injection. Human subjects given large injections of MSH begin to darken within twenty-four hours; daily doses increase darkening until discontinued. The skin returns to its normal color three to five weeks after the last injection. The skin of Negroes shows a more marked and more rapid response to MSH than that of whites (Lerner 1961, p. 102). Psoralen and MSH constitute the known effective means of darkening human skin.[4]

Of greater social interest, however, in view of the state of the world's prejudices, are means of rendering human skin *lighter* in color.

Monobenzyl ether of hydroquinone (MBEH) lightens skin and, since the late 1940s, Dr. Robert Stolar has used it to treat Negro patients who have vitiligo. He has used MBEH to make some of his patients "white."[5]

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solely by changing skin color. Halsell never altered intonation or vocabulary. In addition to factual experience, the 1960s also witnessed considerable fictional treatment of pigment change.

[3] All human skins except those of albinos contain melanin, a brown-to-black pigment which forms the basis of skin color. Color difference among races stems from the amount and spatial distribution of melanin in the skin.

[4] In addition to these agents, estrogen is now recognized as a marginal skin darkener, which explains why some pregnant women become slightly darkened. Artificial use of estrogen also produces darkening.

[5] The treatment has consisted of daily application of MBEH to the skin in ointment form. After four to eight weeks, skin depigmentation becomes apparent. Hair and eye color remain normal. In some patients, depigmentation occurs in skin areas distant from the sites of application. It has also been noted that depigmentation may continue even after treatment with MBEH is discontinued (Spencer 1961). No patient has failed to respond with at least some degree of depigmentation. In fifty-five patients (Lasker 1968), Stolar has continued his treatment to virtually total depigmentation,

On nonvitiliginous subjects, depigmentation of various degrees also occurred, but repigmentation occurred spontaneously if the ointment was not continually applied.[6]

There are obviously drawbacks that cast doubt on the efficacy of MBEH in mass usage, although its present limited application on vitiligo sufferers has evidently been a great success. But, of the drawbacks, some are clearly hypothetical, some can be eliminated, and some depend simply on individual conscientiousness.

It is impossible to predict future development in this or any field, but one can detect enthusiasm among research dermatologists.[7] The skin darkener, MSH, now synthesized, is a naturally occurring hormone from the pituitary gland. There are, in fact, two natural varieties of MSH, both of which produce the darkening effect. Theoretically, there should also be one or more hormones that lighten human skin; that is, there should be at least one natural mechanism that works in each direction.[8] Since persons with vitiligo are born with normal-appearing skin, there *must* be a natural mechanism to produce the white patches later. There may, in fact, be more than one such mechanism, in view of the possibility that there are several forms of vitiligo (Stolar 1963, p. 72). There is widespread feeling that the medical exploration of enpigmentation and depigmentation has only begun to bear fruit.

THE QUESTION OF MASS ACCEPTANCE

A new technology can be examined at three levels: Will it work? Will it be used, and by whom (mass acceptance)? What are the direct and indirect consequences—social, economic, political, psychological? The latter questions are, for the most part, both dependent upon and more uncertain than the earlier questions. The first question is already answered for both skin darkeners and lighteners (if MBEH is regarded as an acceptable technical solution). Some years ago, the question of mass acceptance might also have been readily answerable: "no" for the darkener and "yes" for the lightener. Today, the issues of mass acceptance are much more problematic. The question of usage is intricate and, at the

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a process requiring from two to three years (Stolar 1963). Depigmentation proved permanent among those with vitiligo, although exposure to sunlight would sometimes produce brown spots on the areas exposed.

[6] Throughout his experiments, Stolar kept close track of any adverse reactions to the treatment. Reactions were generally good, with little or no irritation reported. Those few that did experience irritation were able to continue on reduced dosage.

[7] While presenting a paper, I benefited from informal conversations at the Seventh International Conference on Cell Pigmentation (Seattle, September 1969).

[8] Personal communication from Aaron Lerner, Yale University School of Medicine, February 1, 1969.

same time, critical to the entire examination: indeed, by addressing this topic systematically, many of the social issues which may confront American society are brought out.

ACCEPTANCE OF SKIN LIGHTENERS

The rise of "black militancy," the search for black identity, and the stress placed upon Black Pride have had myriad implications over the past few years—from widespread rejection of the word "Negro" to promotion of the idea that "black is beautiful." That mass acceptance of anything so destructive of these new concepts as a truly effective skin lightener is unlikely might appear to be self-evident.[9] But the analysis is not so straightforward; for example, *Ebony* and many other Negro-oriented magazines still carry advertisements for skin creams, hair straighteners, and similar blandishments.[10] In spite of the marginal usefulness of these products, manufacturers are still making money or hope to do so.[11]

As Cruse (1968) illustrates, the polar themes of integration and separatism have for years been a burning question among black intellectuals. Disputes about criteria of beauty—whether to be as close as possible to whites or as far removed as possible—have reflected parallel questioning on the part of the black masses. The question of mass acceptance of a skin lightener, therefore, defies easy solution.

The complexity of the question can be illustrated by examining the critical variables involved. Prominent among these are contemporary attitudes, prior to public announcement, toward the phenomenon of passing. The analogy between contemporary passing and the situation which would ensue under a technique to alter skin color may, in some respects, be a close one, so that these "pre-announcement" attitudes provide a useful first step in our inquiry.[12]

[9] It is widely known that "black beauty" is promoted to eliminate a hopeless attempt to emulate white appearance standards. But Grier and Cobbs (1968) equally stress the psychological significance (and detrimental quality) of the hair-straightening process which all Negro women used to endure. Thus, in addition to obvious psychological attractions, the stress upon blackness and naturalness reaps less recognized benefits.

[10] The ads which promise to lighten skin are not so blatant or direct as in earlier years; the reader must read between the lines: "Helps to clear away unnaturally dark areas." The recent issues of Negro magazines contain advertisements for both "natural" or "Afro" hairstyles and the more traditional ones. The word "natural" has become such a good word that even ads which obviously offer the traditional styles (pictorially) usually use it.

[11] *Ebony* itself, a mass-circulation magazine with some 3 million readers, far surpasses in volume of sales any other single medium of black expression. It is obvious that the old market is still alive. Lasker (1968) quotes a figure of $14 million for sales in 1968 of marketed bleaches (relatively ineffective) and hair straighteners.

[12] Estimates of the volume of permanent passing in the United States vary from 25,000 to 300,000 per year. These are estimates only; the real figure is not only unknown but

Even a skin lightener of unparalleled effectiveness, however, would obviously not remove secondary racial characteristics, which might impede passing for certain individuals. Stolar's vitiligo patients are quite instructive, for they were just ordinary-looking Negroes whose only unique characteristic was their common affliction, and later their common depigmentation, while their secondary racial characteristics did not change. Stolar reports that "almost all the patients I worked with, even the ones with very Negroid features, pass easily, because there are whites walking around with comparable features" (Lasker 1968, p. 65). This was especially likely if the patients dyed their hair. One patient was able to move among her friends without being recognized, and each patient evidently changed social status; many obtained better jobs. And of course the experience of John Griffin and Grace Halsell shows that whites will be taken for blacks if they are black. Nevertheless, one must be cautious in extrapolating such findings, since increased public knowledge of the technique would presumably make a decided difference in the acceptability of those with marked Negroid features.

Assuming for the moment an analogy to traditional passing, it is important to note that passing itself is complex, and several forms may be distinguished. "There are various degrees of passing, accompanied by different degrees of estrangement from the Negro group and emotional identification with the white community" (Drake and Cayton 1962, p. 160). Many Negroes will occasionally pass just for convenience, to get better service; some develop the practice of passing just for amusement. Since it is at the whites' expense, this behavior apparently generates no feeling of guilt or disloyalty to the race. This may be true also of passing for economic necessity, in which case the individual gains better employment but returns to the black community for social contacts. Finally, a light-skinned Negro may turn his back on the race and cross the color line completely, associating only with whites. As Drake and Cayton put it, "For a Negro to pass socially means sociological death and rebirth" (1962, p. 163).

Whether or not other Negroes protect the identified passer may depend upon whether the acquaintance feels he is being slighted or whether he understands that the passing is for economic reasons. While passing for social reasons (for the company of whites) almost invariably arouses deep hostility, passing for economic reasons may be treated with understanding or at least acceptance.[13]

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essentially unknowable, given the delicacy of the matter. For an excellent discussion, see Drake and Cayton (1962, pp. 159–73).

[13] Parenthetically, it is significant that we know virtually nothing about the psychological effects of racial passing. It should also be noted that our information on passing in the United States has become dated.

Attitudes today are in flux due to the emergence of militant perspectives. The time of introduction would be a major factor because, especially among the younger blacks, the trend is running strongly toward acceptance of cultural pluralism.[14] With only modest extrapolation of these trends, it seems clear that the later such an innovation is introduced, the greater the hostility to passing may be.[15] There are numerous indications that attitudes are changing; cultural manifestations of Black Pride are becoming widely accepted.[16] Just how successful this search by American Negroes for a new identity will be is crucial; it can provide a psychological anchor for the individual, notwithstanding the economic inducements of passing. If, on the other hand, passing affords only temporary respite, then the appearance of a true skin lightener should be received by at least inward rejoicing and a concomitant strain toward acceptance.[17]

Analysis of pre-announcement attitudes, instructive though it may be, is insufficient to forecast the degree of mass acceptance. Response to an innovation of this magnitude would be based not only on preexisting attitudes; the innovation would generate new attitudes in its own right, and the very announcement of such an epochal innovation would demand reconceptualization. Presumably, a fundamental reappraisal of racial questions would occur by black and white, militant and integrationist.[18]

[14] Several recent studies have shown that, in spite of militant urging, a strong majority of the black community still supports structural assimilation (as opposed to, say, a black state). But the studies also show growing support for cultural pluralism (or cultural nationalism) with separateness in clothing, music, and concepts of beauty. (William J. Wilson presented a substitute paper on this topic: Session 65, 1969 ASA meetings.)

[15] For further substantiation of recent attitude change in Negro college students, see Morland and Williams (1969, p. 110).

[16] Along with other observers, Glenn (1963) concluded that the importance of skin color as a basis for status is diminishing; from data of a study published elsewhere in this issue of the *Journal*, Udry, Bauman, and Chase conclude that the traditional advantage of light-skinned Negro men in mate selection has declined, although no change is found for women.

[17] Some doubts about the ultimate efficacy of Black Pride are raised by a limited study of Philadelphia black preschool children. For his undergraduate thesis at Princeton, James A. Floyd, Jr., ascertained the strength of parental beliefs in Black Pride and Black Power concepts. Using Morland's picture test, he examined racial awareness in their children ("Self-Concept Development in Black Children," 1969). He found the only significant relationship between parent beliefs and childrens' responses was: "the stronger the parent's support of 'Black Power,' 'Black Pride,' and the 'Black Revolution' in general, the more the child wants to be white." The study is reported in Morland (1969, p. 373).

[18] A voluminous and sophisticated literature exists on the topics of attitude change and acceptance (diffusion) of innovations, both of which appear relevant to the question at hand. For an overview of the literature on the diffusion of innovations, see Katz, Levin, and Hamilton (1963) and Rogers (1962). For attitude-change theories, see Cohen (1964).

Preexisting attitudes cannot be ignored in the reformulation, but they will provide only one component of the emerging post-announcement orientation.

For post-announcement attitudes, the nature of the perfected technique itself, its strengths and drawbacks, would inevitably be significant. This refers not only to such evident factors as cost and availability, ease of application, or toxicity, although these have obvious implications for usage, but most clearly in those variables specific to the problem of skin color change: the rapidity of change from a single dose, the "naturalness" of appearance, the evenness of the change across body surfaces. Significantly, of the three existing techniques, only MSH comes out successfully on most of these dimensions. The lightener does not perform at all well.

The nature of white reactions should be of great significance. Indeed, the reaction among Negroes in America might depend to a considerable degree upon the reaction among American whites. This is paradoxical not only because of the strong thrust for black cultural independence; the reaction might perhaps be strongest by the militants who regard themselves as most independent of white demands. If white racists passed laws against color change in a last stand against "defilement," the black reaction, even by militants, might be extensive use as a measure of defiance. They would be mightily tempted to "singe the king's beard." At the same time, perceptive individuals would recognize that the technique precipitates a crisis for black identity.

Widespread popular adoption of skin lighteners would undoubtedly engender efforts to transfer prejudice to such secondary racial characteristics as lips, nostrils, and hair. Whites possessing one or more Negroid characteristics, however, would greet such attempts with rage.[19] It is questionable whether such efforts to transfer prejudice would be entirely successful.

POPULAR ACCEPTANCE OF SKIN DARKENERS

As with skin lighteners, mass adoption of a skin darkener would raise both aesthetic and ideological issues. On the one hand, we have the longstanding paradox that it is considered aesthetically attractive for a person to be dark (or "tanned"), yet if the natural color is too dark the person encounters racial prejudice. The fashions of bodily aesthetics are wonderfully changeable; the question may be raised whether a drug

[19] Many dark-skinned persons do not have these secondary features. Those that do could make use of the widespread availability of hair straighteners, hair dyes, and similar mechanisms, or, as John Griffin did, simply shave their hair and pretend to be bald, or wear a wig. The devices are legion, and they would be aided by powerful men who consider themselves truly "white" but happen to have nonwhite features.

which turns one dark under the bathing suit as well as elsewhere could become fashionable. The question is impossible to answer in its entirety, but certain conclusions are clear. To begin with, technology for turning light people dark is more effective than that for turning dark people light. It is clear that the technical characteristics of a skin darkener would affect popular acceptance, and it is interesting to note that on most criteria MSH comes out very well. Thinking, then, of a decade after introduction (perhaps conservative), the adoption of skin darkeners for beauty purposes is entirely possible.

That this estimate may be conservative is clear when the recent history of the "natural" hairstyle is examined. What started as a symbol of black militant protest was ultimately absorbed by many in the Negro middle class. The latest stage has been adoption of the "kink" by white fashion. In certain metropolitan centers, fashionable boutiques and even department stores have carried "natural" wigs for whites in all colors from black to blonde.[20] Fashion, then, which can lead white men and women to broil for hours under the sun, and which can steal the militants' "thing," may ultimately be capable of making darkness under the bathing suit fashionable.

The possibility of an ideological use of a skin darkener must be seriously considered within the near future. The idealism and direct-action orientation of youth today provide fertile ground for a movement of reverse passing. Analogies with the southern Freedom Riders come quickly to mind. The alienated segment today easily outnumbers previous cohorts. The desire to throw off parental bonds, the moral admonition to "do one's own thing," the enthusiasm to expose hypocrisy, even a desire for "voluntary servitude" in the black cause—all could be served by reverse passing. This suggests that the experiences of Griffin and Halsell may be repeated by hundreds, perhaps thousands, and that the use of skin darkeners for serious ideological purposes (or for psychiatric adjustment) must be considered as a possibility.

CONCLUSION

Although parts of the preceding analysis were of necessity highly speculative, certain points are unmistakably clear. Techniques to alter skin color exist, and efforts to improve them are both feasible and well advanced. The possibility definitely exists that the advent of such techniques on a production scale would lead to widespread usage by segments of the black and/or white populations. Such wide acceptance would undoubtedly produce massive alterations in racial attitudes within both races—

[20] *Women's Wear Daily*, often regarded as the trade's bible, has noted the trend and given its seal of approval (*Ebony*, January 1969, pp. 104–9).

alterations of such magnitude as to be of fundamental importance to American society.

The material presented has covered only selected implications for American society, omitting discussion of the possible use of a pigmentation technology by other racial groups—"Chicanos" or American Indians, for example. Its possible effects on interracial marriage have not been explored here, nor the possible impact of the technique in other societies such as the Union of South Africa. Internationally, this is not strictly a black-white problem, for skin color and class or caste are closely aligned in many societies.

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Commentary and Debate

FURTHER COMMENTS ON ROBERT COOK'S REVIEW OF *THE ACTIVE SOCIETY*

Permit me to comment upon the controversy aroused by the *AJS* in its assignment of the review of Amitai Etzioni's *The Active Society*. The reviewer, Robert Cook, appeared at first glance not to be a sociologist. That, in fact, he is a man with some experience in the field is immaterial. The point is that your readers, apparently believing that he was not, rushed to protest the assignment of Mr. Etzioni's book to a reviewer who is not a member of the "community of scholars." I am not surprised at this clear intellectual-elitist bias of sociologists, but I feel compelled to protest.

As sociologists, we study the real world. If our analyses are correct, they should be able to be read and criticized by thoughtful persons outside sociology. We sometimes tend to become rather myopic in our views; we read each other, develop our hypotheses and research techniques in collaboration with each other, and evaluate our hypotheses on the basis of data which are all to often filtered through our own artificially created coding systems. All this can be done without a single contact with the real world; our field work is most often done by others, with the major researcher not having met a single respondent. Perhaps an occasional review by a nonsociologist would help to redirect our perspective.

In recent years, sociologists have purported to be concerned with *problems* of the real world. (Witness dialogues in the *American Sociologist* and the 1970 meetings of the American Sociological Association.) To claim that the only critics of our analyses and our proposed solutions to these problems should be members of the discipline is both unwise and unreasonable.

I think our knowledge of social behavior should remind us that it is unlikely that people will accept our suggestions as to how their lives should be run without demanding some right to consider vigorously and carefully whether this is, indeed, the kind of life they want for themselves. In the unlikely event that we should be given this mandate, I wonder whether we should *choose* to make such decisions. Does our knowledge give us the right to assume such an elitist position? Do we dare presume today's generalizations are infallible?

If we are not to fall into this elitist trap, I think we must assume and be pleased that nonsociologists will evaluate our work in terms of both their own experiential evidence of social behavior and their ideal view of society. As Cook points out in his response to the criticisms, it serves as a

check on our own biases, telling us whether our ideas are achieving acceptability "outside" and suggesting reasons for the acceptance or lack of it. I am not suggesting that all reviews be by nonprofessionals, nor that sociological works be reviewed by an unselective group of laymen, but only that some works such as *The Active Society*, which are general commentaries on the society, might do well to sustain the criticism of the intelligent and well-read nonprofessional.

I am also suggesting that *ad hominem* arguments might well be avoided, not only by reviewers, but also by the readers of the reviews. In their correspondence concerning Cook's review, most of your commentators paid scant attention to the substance of his review, complaining only about his presumed lack of professional qualifications.

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Erratum

The editor's note which appears at the end of Don Martindale's review of *On Social Order and Mass Society* by Theodor Geiger and *Symbols and Social Theory* by Hugh Dalziel Duncan (*AJS*, September 1970, pp 359-61) is actually a footnote by the reviewer, mistakenly referred to as an editorial note.

Book Reviews

Reflections on the Problem of Relevance. By Alfred Schutz. Edited, annotated, and with an introduction by Richard M. Zaner. New Haven, Conn.: Yale University Press, 1970. Pp. xxiv+186. $6.75.

The Relevance of Sociology. Edited by Jack D. Douglas. New York: Appleton-Century-Crofts, Inc., 1970. Pp. xii+233. $2.65 (paper).

Radical Man: The Process of Psycho-Social Development. By Charles Hampden-Turner. Cambridge, Mass.: Schenkman Publishing Co., 1970. Pp. xii+434. $11.25 (cloth); $4.95 (paper).

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Two of Max Weber's most noted methodological doctrines, the conception of interpretative understanding (*Verstehen*) and the postulate of ethical neutrality in social research, have been the subject of renewed critical attention in recent years. The former has been reconsidered in connection with a growing interest in phenomenological sociology, the latter in connection with calls for more diagnostic, critical, partisan, and prophetic styles of sociology.

The phenomenological movement in sociology finds its most seminal spokesman in the Viennese philosopher Alfred Schutz. Like George Herbert Mead, whom he resembles in many respects, Schutz was not widely appreciated during his lifetime; recognition has awaited the devoted efforts of students (and of Mrs. Schutz) to make his words more accessible. This they did with the *Collected Papers*, published in three volumes from 1962 to 1965, and a fine translation of his one published book, *The Phenomenology of the Social World*, which appeared in 1967. These works reveal Schutz as a meticulous craftsman and highly original thinker, dedicated to solidly grounding a view of social reality and of social science in which "action" is the fundamental point of reference. *Verstehen* is not only a crucial tool for sociology, it is also the natural form of commonsense knowledge of human affairs which all men employ in everyday experience. To understand social reality one must therefore grasp the meaning which acts have for actors, and to this end Schutz provides an ingenious set of conceptions, including that of the actor's "biographical situation," a typology of alter egos, the idea of the actor's "stock of knowledge at hand," and its constitutive "systems of relevance."

It is these last two conceptions which are explored with unprecedented subtlety in the latest posthumous publication. Richard M. Zaner has excellently edited this unfinished first draft of a manuscript written in English in the late 1940s. *Reflections* develops the argument that systems of relevance which orient actors in daily life are of three distinct kinds—topical, interpretational, and motivational—and that any one of

them may become the starting point for bringing about changes in the other two. It also analyzes the ways in which each actor's unique stock of knowledge is built up, through a process of "sedimentation," during his life history; the ways in which this process is typically stopped, temporarily interrupted, or recommenced; and, in a few suggestive fragments, the structure of gaps or "vacancies" in the actor's stock of knowledge.

Schutz thus extends not only Weber's concern about the subjective meanings of actors but also Simmel's analysis of the internal differentiation of selves. Drawing on Simmel's conception of the self as inexorably fragmented, he sees this fragmentation due to the fact that (1) we live simultaneously in multiple systems of relevances, different "provinces of meaning," and (2) we are involved in each sector of reality with different layers of our personality, because of our autobiographical situation. Hence "we carry along at any time a certain number of elements of our knowledge not consistent in themselves and not compatible with one another," a condition which we normally disregard as long as we have no compelling motives to face such a situation of conflict.

For the sociologist it is particularly disappointing that Schutz deals here only with the situation of the abstracted individual; he did not write the projected parts of the study which were to examine the effect of social and cultural organization on the systems of relevance. This and related questions are presumably carried further in his final work, *Die Strukturen der Lebenswelt*, which is due to be published in German soon and then to be translated into English. Meanwhile, *Reflections* may be of some appeal both to those few sociologists who seek to follow a phenomenological method in social research and to those who wish to think in more philosophically precise ways about the problem of relevance.

What the eleven papers collected in *The Relevance of Sociology* may lack in philosophical precision (not much, really), they make up for with moral passion, honest probing, and provocative prose. The anthology opens with three trumpet calls for engagement: for an art of social diagnosis (Mills), political action and leadership (Galbraith), and the construction of utopias (Wilbert Moore). The rest of the volume—Weber's "Science as a Vocation," six essays reprinted from *Social Problems* and *American Sociologist*, and the title essay freshly written by the editor—explores issues related to commitment and objectivity.

What is missing in this picture is an attempt to spell out just what sociology can do to help. Howard Waitzkin offers a realistic assessment of some of the factors—cooptation, career opportunity costs, elitism—which tend to undermine the contributions of applied sociology. But there is no examination of the *different types of social knowledge and the specific ways in which these may relate to praxis*—an omission which may say a lot about the level of seriousness with which the relevance of sociology has been discussed thus far.

The dialectical highpoint of the book is Alvin Gouldner's searching analysis of "The Sociologist as Partisan," an analysis which brings him

somewhat closer to Weber's position than he was in "Anti-Minotaur." In response to the essay by Howard S. Becker, which invites sociologists to take sides on behalf of all underdogs, Gouldner argues that neither weakness nor power as such is a compelling value, that attraction to the underdog's exotic difference easily becomes a patronizing romanticism and, indeed, one that is commercially rewarding today. Gouldner proposes a broader kind of partisanship, one committed to man's common humanity, and one compatible with a quest for objectivity because it involves adoption of an "outside" standpoint: "probably the only way in which we can even recognize and identify the participants' standpoint." Melvin Tumin and Jack Douglas project similar visions of the calling of sociology, the latter arguing that "man is in more desperate need of an objective understanding of himself in his world than he is of anything else," and that sociologists default on their responsibility to minister to that need by yielding to the "libertine freedoms of narrow identifications."

Douglas also has some tough-minded suggestions for how to uphold objectivity in social research, notably, to institute an *independent check* of the sociologist's ongoing research experience. Gouldner is more concerned with the inner preconditions for sociological objectivity: it requires a highly developed moral character, one that can resist the temptations of hypocrisy and the need to be loved and that is capable of absorbing facts inimical to one's own desires and values. Whether one sees those ethical commitments as antagonistic to a "professional" orientation, as Gouldner does, or sees them as the proper foundation of right professional behavior, as I do, is a matter of taste, I suppose. In either case, the *moral* strength needed for the pursuit of objectivity in social research tends to be undermined, as Gouldner aptly observes, by "a compulsive and exclusive cultivation of purely technical standards of research and of education, so that there is neither a regard nor a locus of responsibility for the cultivation of those very moral qualities on which objectivity rests." While Gouldner remains bothered by Weber's rhetoric of the segregation of facts and value judgments, he appreciates Weber's view that the maintenance of objectivity requires a persisting moral effort.

The author of *Radical Man* not only talks about being relevant, he does something about it. The trouble is that he cannot decide whether he wants to be narrowly partisan or objective in either Weber's or Gouldner's sense of the term.

This and related confusions corrupt what is otherwise an ambitious synthesis of social psychological studies and a spirited tour de force.

Thus, after boldly announcing that a social science which relies on detachment, precision, empiricism, experimentation, and mathematical analysis is grievously misguided, Hampden-Turner fields his own argument armed with a battery of psychometric instruments, laboratory experiments, and intercorrelation matrices—even a chapter called "Corporate Radicalism," because "studies of change in business organizations are among the very few records, adequately researched, of the processes of psycho-social development." After maturely observing that persons

who polarize over "false dichotomies" like determinism versus freedom thereby reveal themselves to be psycho-social infants, he marshals all the evidence he can to show that the world is divided into conservatives and radicals, that one issue which distinguishes them is determinism versus freedom, and that what the world needs is more confrontations between them. After rejecting "elitism" as a conservative vice, he builds an elaborate case to show that most radicals are paragons of mental health, the avant-garde of a neurotic species.

The chief talking point in this argument is a new model of "psycho-social development"—a term which, incidentally, is never defined. Hampden-Turner has invented a cyclical model of the process—apparently unaware that Talcott Parsons pioneered similar models in the 1950s, for the only reference to Parsons is a naughty footnote where he tells that Mills once "teased" Parsons—which represents the mutually generative "existential capacities" of perception, identity, competence, risk taking, and openness to dialogue. The model is buttressed by references to numerous authorities on mental health. Then, out of nowhere, we are told that these capacities are peculiar to "radical man." What's more, scientific evidence is adduced to show that these capacities are correlated with traits such as "ease in talking and making friends," "high occupational focus," "great powers of work and concentration," "giving others the benefit of the doubt," "childhood friends known and liked by parents," "tendency toward feeling responsible"—such a cluster of PTA-approved virtues that Radical Man begins to resemble the well-adjusted girl next door.

Next, the appeal of Radical Man is heightened by contrasting him with his opposite, Anomic Man, alias Conservative Man. Never mind that the critique of anomie originated with and has always been central for conservative social thinkers. Nor that conservative thinkers have been especially drawn to an appreciation of man's ability to create and transmit symbols; the capacities for synthesizing and symbolizing, we now learn, are *radical* human capacities! [*sic*] (p. 20). Nor that conservative thinkers have historically been the loudest and most consistent opponents of mindless technology; this disease is now identified as "crypto-conservatism."

Having associated all good things with Radical Man, the author makes clear that not all radical men are so good. First he disqualifies the Old Left; they are more like conservatives than like the true New Left radicals. In case we are squeamish, he also disqualifies the "Psychedelic Left." Then he further disarms us: not even all empirical New Left radicals are so good. Some, he insists, are really rebellious just for the sake of destruction; many have been identified as pre-moral opportunists rather than autonomous followers of principle; there are many resemblances between the (New) Radical Left and the Radical Right; in one study, 20 percent of those on the Left turned out to be more dogmatic, narrow, and authoritarian than the average conservative student. Having thus reinstated himself as Mr. Supra-Partisan, Hampden-Turner is ready to de-

liver his coup de grâce. The violent confrontations triggered by radical students are potentially quite beneficial; the violence at Columbia University probably decreased the amount of violence in the world, in the long run; it would be a good idea "if we locked up some administrators" for sixteen hours in a room with radical students, for the only alternatives (in the words of that old radical poet T. S. Eliot) are "fire [of confrontation] or fire [of war]."

For Gouldner's dictum that a "partisanship unable to transcend the immediacies of narrowly conceived political commitment is simply just one more form of market research," *Radical Man* is a possible case in point. What else can one say of a book which equates the intersubjective honesty and good will of Buberian dialogue and *T*-groups with the manipulative, hate-filled transactions of campus confrontations, except that its telling examples and humane intent are vitiated by a consistent failure to make some terribly elementary distinctions: between personal *creativity* and ideological *radicalism,* and between qualities of *personality* and wise action in *politics.* Suddenly someone like Schutz seems terribly relevant; in Zaner's words, "the urgency of the questions pertaining to the human condition, [Schutz] felt, demanded thoroughness and breadth of comprehension, or they inevitably become distorted, misunderstood, mere leaves on a bitter wind leading to ineffectual and fanatic actions which only serve to worsen the crisis of modern man."

Constructing Social Theories. By Arthur L. Stinchcombe. New York: Harcourt, Brace & World, 1968. Pp. 303. $3.95 (paper).

Essays in Sociological Explanation. By Neil J. Smelser. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968. Pp. vii+280. $8.25.

Politics of Social Research: An Inquiry into the Ethics and Responsibilities of Social Scientists. By Ralph L. Beals. Chicago: Aldine Publishing Co., 1969. Pp. vii+228. $6.95.

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Many sociologists believe the discipline is currently passing through a crisis, a stage in its development where the old work styles, sensibilities, ideologies, and methods are being challenged and in many quarters, rejected. These problems are so pervasive that sociologists currently producing intelligent monographs almost inevitably deal with some aspect of the "crisis."

These three books are not exceptions. Arthur Stinchcombe and Neil Smelser focus on difficulties in developing social theories; and Ralph Beals on problems and politics involved in gathering data. I will deal primarily with what the authors implicitly and explicitly say about the process of theorizing and the state of that art today.

Smelser's book consists of eight essays which examine two main

themes: the codification of sociology and the relationship between sociology and its sister social and behavioral sciences. The essays, five of which had been previously published, are a good summary of much of Smelser's theoretical work over the past ten years. From the point of view of methodological and theoretical problems of explanation, Smelser reviews his work in historical sociology, in collective behavior, and in economic development and social change.

Stinchcombe's book is more ambitious. His aim is to teach the observer of social life the way to build theories which will help explain empirical uniformities. This is a demanding self-imposed assignment, since one of the salient features of sociological theories in the past has been their association with the idiosyncratic styles of individual theorists. Although sociologists have tried to imitate the logical structure and style of a Marx, Durkheim, Weber, Parsons, or Merton, few have succeeded in achieving anything beyond a crude form of mannerism. Stinchcombe starts with a set of data needing explanation, and for which no theory exists. His approach to inventing an appropriate theory is inductive. In fact, the entire book depicts Stinchcombe "the methodologist" as much as "the theorist" and is testimony to the necessary interplay between the two enterprises. The monograph is divided into two fundamentally discrete sections which only loosely hold together: one treats the properties of low-level theories; the other details strategies of concept formation.

Stinchcombe briefly analyzes the process of creating causal theories and the way to test them against plausible alternatives. An extended discussion of the logical structure of causal theories follows. He focuses on the definition and relationships between variables and concepts. (There is an abundance of concrete examples.) Stinchcombe considers three types of complex causal structures: demographic, functional, and historicist explanations. A demographic theory is "one in which a causal force is assumed to be *proportional to the number of people* of a certain kind. The number of people of that kind is, in the general case, determined by other causal processes" (p. 60, author's italics).

Functional explanations are suggested by behavior patterns "in which the *consequences* of some behavior or social arrangement are essential elements of the *causes* of that behavior. . . . Whenever we find *uniformity of the consequences* of action but *great variety of the behavior causing those consequences*, a functional explanation in which the consequences serve as a cause is suggested" (p. 80, author's italics). A brilliant, but all too abbreviated, section of the analysis of functional structures reformulates Marx's ideas on the structure of parliamentary democracy in terms of a functional model. Stinchcombe focuses on the differential consequences of patterns of behavior for contending social classes. Changes in the forces of production, shifts which are necessary to maintain the power of the ruling class, have consequences which are in the interest of the ruling class at Time 1, but which also have unanticipated consequences which ultimately produce the conditions that undermine the ruling class at Time 2. Stinchcombe's analysis retains the dynamic character of Marx,

yet clearly illustrates the overlap between Marxian and functional orientations. There is a rich and relatively unmined set of materials in the work of Marx, especially in his later correspondences with S. Meyer and A. Vogt, which corroborate Stinchcombe's argument of the functional structure of some of Marx's ideas, and it is unfortunate that Stinchcombe did not expand this section. This section, like many others in the book, is tantalizing.

Finally, historicist explanations are called for when "an *effect* created by causes at some previous period *becomes a cause of that same effect* in succeeding periods" (p. 103, author's italics).

These three forms of causal structures give us clues to the latent structure of Stinchcombe's approach to theoretical problems. In brief, by adopting a form of eclecticism, he avoids the difficulties stemming from the incompleteness of sociological paradigms. He accepts the approaches of diverse schools of thought in sociology and holds that the selection of a theoretical perspective should be fundamentally determined by the nature of the data that the investigator has in hand. Smelser's essays also adopt a similar eclectic position.

By embracing such a catholic approach, Stinchcombe and Smelser implicitly raise some important issues about commitments to schools of sociological thought. It is almost fashionable now to reject functional analysis as a mode of explanation. Its detractors claim that it is a complete theory when it is, in fact, the bare outlines of an approach to explaining patterns of behavior. Yet it is often rejected on the basis of *ad hominem* arguments about the ideological biases of the sociologists who use it. Indeed, a great number of the dissenters are incapable of outlining the fundamental structure of the orientation, or of citing studies that have made use of it (or for that matter, those that have not). In a way, the critics of functionalism beat at a straw man, since the theory has never really been developed to the point where it can be systematically tested against a wide variety of empirical data.

Conflict can play a constructive role among various segments of a scientific community. In fact, historians of science such as Kuhn and Gillespie have pointed out that some level of conflict is inextricably related to scientific development. The history of the "harder sciences" has been marked by intense conflicts over different theoretical orientations. In geology, for example, disputes in the early nineteenth century were every bit as "heated" as those that we are now witnessing in contemporary sociology. Conflict between schools of thought—conflicts often based more on value disagreements than cognitive differences—is often one of the marks of relatively "immature" disciplines. Smelser notes: "As [a discipline] achieves scientific maturity, it more nearly attains consensus on the scientific problems to be posed, the relevant independent variables, a theoretical and philosophical perspective, and appropriate research methods. Simultaneously it witnesses a decline of distinctive schools; a decline in the quantity of polemic about the 'nature' of the field and the value of different 'approaches' to the field; a decline in

propaganda, proselytization, and defensiveness; and an increase in discussion of findings in relation to accepted criteria of validation" (p. 7). The history of older sciences suggests that theoretical consensus is hard won. Perhaps sociology will follow the course taken by the harder sciences. However, at this point in the history of sociology, each of the different theoretical orientations must be allowed to evolve so that it can be evaluated on the basis of its effectiveness in explaining social activities of social life. I believe, and I think Smelser and Stinchcombe would agree, that no sociological orientation has reached that stage of development.

Implicitly, both authors suggest profound and significant differences between the origin and evolution of strategic problems in the social as compared with the physical sciences. In the physical sciences theoretical paradigms and prior empirical research lead investigators directly to many of the problems that must be solved for future advance. In contrast, sociologists not only find it hard to agree on what constitutes facts but also find it exceedingly difficult to identify a hierarchy of problems. In sociology the selection of problems worthy of study and allocation of resources to them seem to be dictated by personal taste. There are few institutionally recognized taste makers. One has no sense of agreement among social theorists as to what problems must be solved or even addressed to produce cumulative advance.

Although both authors go far in setting down the logical principles of theory construction and conceptualization, they do not give the reader an idea of what actually goes on in the day-to-day operation of developing a theory. From Francis Bacon to James D. Watson, scientists remind us that the public record of a science tends to produce a mythology: it represents the scientist as moving toward his final product by logical steps. Is this really the full story of the complex ways in which social or physical theories are constructed? What of all the false starts, the poor ideas, the collaborations and interactions with colleagues, the inspirations, the serendipities? Are these not also an integral, if not necessary, aspect to the building of a theory? Although some contend that these aspects of the development of a discipline are best left to autobiographies, I think we need to increase the autobiographical elements in our monographs if we wish to convey to the incipient sociologist the actual process of discovery. Stinchcombe, for example, has a truly brilliant discussion of the conceptualization of power phenomena in chapter four. Yet the reader is presented with the final product, which is of the first rank, but which is like a diamond already cut and polished when discovered. It is difficult to envision what the diamond looked like in the rough.

One final comment on these two books is in order. Both of them should be extremely useful for classroom teaching. The first section of Smelser's book is as good as any I know in identifying the sociological perspective and in differentiating it from the economic, psychological, and anthropo-

logical points of view. And Stinchcombe's monograph should be must reading for students of the relationship between theoretical and methodological problems.

Beals's volume deals with a different set of problems. He discusses the relationship between academic researcher and government research funding agencies. He attempts to answer the following questions: What, if any, are the obligations of social scientists to their government? What problems are faced by researchers in carrying out research funded by controversial government agencies, such as the Department of Defense, or the CIA? How can a social scientist working for the government "retain his freedom, honesty and integrity, promote the development of his discipline and insure the application of his findings for human welfare" (p. 18)? The materials that Beals brings to bear on these questions are by and large treated in a rather pedestrian way. However, the book does raise two interesting problems.

First, the social scientist who works for the government is often placed in a position of role conflict, in which he must deal with two reference groups with seemingly incompatible goals and values. How does an "academic man" maintain his commitment to the goals and values of the wider academic community as well as to the local organizational norms of the funding agency? The cross-pressures under which the "local-cosmopolitan" scientist works produces the expected result: it is difficult for the government to recruit capable researchers and to retain those that it does manage to co-opt.

Second, when Beals outlines the difficulty that American researchers have in gathering data in foreign cultures, especially when their research is sponsored by the government, he stumbles on a significant problem of the relationship between what Robert Merton has recently called "insiders" and "outsiders." The claim of insiders, in brief, is that they hold a privileged position of access to knowledge. The logical conclusion of this argument is that only blacks can study blacks, only women can study women, only Mexicans can study Mexicans with any degree of comprehension of the cultural values and mores of each group. Beals notes, especially in describing the "Sanchez affair," how the social characteristics of an investigator are increasingly affecting the success that he has in gathering data. The problem has little to do with the actual competence of the investigator. For the doctrine of the "insider" holds that, regardless of the talents of the "outside" investigator, he cannot gain access to the "social truth." This doctrine, with its obvious implications for the collection and analysis of sociological data, is becoming an increasingly disturbing problem for investigators and deserves additional study by social scientists.

In conclusion, the Stinchcombe and Smelser books are worthwhile and instructive reading. While they may occasionally be off base or in error, they show perceptiveness and sensitivity in dealing with some of the more salient problems facing sociological theory.

Beyond Belief. By Robert N. Bellah. New York: Harper & Row, 1970. Pp. xi+291. $7.95.

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There are a few of us distinguished enough to be able to include our book reviews when we publish collections of our essays, and there are fewer of us still who are capable of writing the kinds of book reviews that *deserve* to be published in the collection of our essays. Robert N. Bellah's reviews of *Honest to God* by Bishop John Robinson and *Love's Body* by Norman O. Brown are sufficient evidence that anything that a scholar of the highest quality does is worth reading and worth rereading. As a matter of fact, my own inclination is to think that what Bellah has to say about Brown and Robinson is of considerably more interest than what Brown and Robinson themselves have to say.

Beyond Belief is a collection of essays and articles written by Bellah for the most part during the 1960s; while most of the articles could be hunted up in the journals in which they were originally published, it is still extremely helpful to have the slender but impressive corpus of Bellah's work during the last decade gathered together into one place. Anyone who is at all interested in the sociology of religion will want to own a copy of *Beyond Belief* if only to have immediate access to "Religious Evolution," "Civil Religion in America," "Transcendence in Contemporary Piety," and "Between Religion and Social Science"—in my judgment, Bellah's foremost contributions to the sociology of religion.

It is well known, of course, that Bellah is a Parsonian and a Weberian. *Beyond Belief* makes it clear that he is willing to push the stand that Parsons and Weber take concerning man as a "meaning seeking" creature to logical conclusions which neither of his two masters seem to have reached. He states: "My conclusion, then, runs about as contrary to so-called secularization theory as is humanly possible. It is my feeling that religion, instead of becoming increasingly peripheral and vestigial, is again moving into the center of our cultural preoccupations. This is happening both for purely intellectual reasons having to do with the re-emergence of the religious issue in the sciences of man and for practical historical reasons having to do with the increasing disillusionment with a world built on utilitarianism and science alone. Religion was the traditional mode by which men interpreted their world to themselves. Increasingly modern man has turned to social sciences for this interpretation. As social science has attempted more and more to grasp the totality of man it has recognized many of the preoccupations of traditional religion. As traditional religion has sought to relate to the contemporary world it has leaned more and more on social scientific contributions to the understanding of man" (p. 266).

And, even more succinctly, he notes, "The conclusion grows ever stronger that religion is a part of the species life of man, as central to his self-definition as speech" (p. 223).

But the most striking conclusion that Bellah makes for the sociology of religion is contained in the concluding paragraphs of the volume: "I am not advocating the abandonment of the canons of scientific objectivity or value neutrality, those austere disciplines that will always have their place in scientific work. But those canons were never meant to be ends in themselves, certainly not by Weber, who was passionately committed to ethical and political concerns. They are methodological strictures. They neither relieve us of the obligation to study our subject as whole persons, which means in part as religious persons, nor do they relieve us of the burden of communicating to our students the meaning and value of religion along with its analysis. If this seems to confuse the role of theologian and scientist, of teaching religion and teaching about religion, then so be it. The radical split between knowledge and commitment that exists in our culture and in our universities is not ultimately tenable. Differentiation has gone about as far as it can go. It is time for a new integration" (p. 257).

The author is true to his own principles in what may seem to many readers to be the most remarkable of all of his essays. He traces in the relatively brief introduction his own religious odyssey through fundamentalist Protestantism, Marxism, Tillichian Christianity, and "Berkeley" (which combines a willingness to believe with a skepticism about closed ideologies). "For the deepest truth I have discovered is that if one accepts the loss, if one gives up clinging to what is irretrievably gone, then the nothing which is left is not barren but enormously fruitful . . . the faith of loss is closer to joy than to despair" (p. xx).

Most sociologists would not be brave enough to reveal the connection between their own deepest personal fears and longings of their professional work, and maybe most of us should not do so. But Bellah carries it off superbly. The present writer, whose own religious pilgrimage differs from Bellah's about as much as it possibly could, will still acknowledge that his introduction notably improves the usefulness of the rest of the book, both as sociology of religion and as a record of the religion of a sociologist.

The Logic of Comparative Social Inquiry. By Adam Przeworski and Henry Teune. New York: Wiley-Interscience, 1970. Pp. xii+153. $8.50.

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It is surprising, in view of the very large amount of comparative study during the past decade, that so little has been written about theoretical and metamethodological problems of comparative analysis. A vast

amount has been written on such subjects as problems of data collection, storage, retrieval, and interpretation; pitfalls in employing conventional survey research procedures on a comparative basis; the viability of specific concepts in cross-cultural perspective; and so on. But aside from relatively short contributions from such people as Bendix, Marsh, Galtung, Osgood, Rokkan, Sjoberg, and Scheuch, there has existed a remarkable lack of work on the general problems of comparative analysis. It is thus exciting and intellectually relieving to welcome a book which claims to be pivotally concerned with theoretical issues.

Adam Przeworski and Henry Teune set the tone for their book in the stress which they quickly put upon two points; first, they emphasize that the major goal of comparative research is to substitute the names of variables for the names of concrete social systems; and, second, they maintain that the question of the comparability of two or more social phenomena depends upon the level of generality which is applied to express observations. From these two clearly stated premises, much of the book succinctly and logically flows. The principal themes which Przeworski and Teune develop are: explanation and theory; research design and the comparison of relationships between variables; levels of analysis and inference; the formulation of theories in cross-system perspective; forms of measurement; and the establishment of equivalence. A useful bibliography is also included.

The authors emphasize that comparative research should not be regarded as an end in itself—sustained by the idiographic motivation to gain empirical knowledge about a plurality of societies—but as central to the development of a theoretical science. The specific contribution of comparative inquiry in this respect is, as has been noted, the replacement of proper names of concrete systems by the relevant variables. Przeworski and Teune in turn accord *explanation* a central place in theory construction, there being four major requirements of explanatory theory: accuracy, generality, parsimony, and causality. There is, it is argued, a degree of zero-sumness about the relationship between these requirements. In particular, the attainment of a high degree of accuracy is effected at the expense of generality and parsimony. In many respects this book hinges upon the tension obtaining between the goals of accuracy on the one hand and generality/parsimony on the other—Przeworski and Teune clearly favoring the latter over the former. The authors readily concede that their image of theory is not a definitive one but rather that, if their model is accorded viability, then cross-systematic studies become an integral part both of theory testing and theory building. (The generality postulate makes this tautologically accurate.) It is a pity, however, that the criterion of causality has not been developed further. There is perhaps a too-ready acceptance of the Hempelian model of causal explanation; some attention might fruitfully have been given to other types of causation—although this would have undoubtedly put some strain upon the authors' commitment to the view that most problems of uniqueness and universality can be redefined as problems of measurement and the general

tendency to argue that the major problems of comparative research are basically ones of measurement.

The most interesting aspect of this book is its treatment of levels of analysis and relationships between variables in social systems. It is cogently argued, against the tendency to operate in terms of a *most*-similar-systems research design, that "systems differ not when the frequency of particular characteristics differ, but when the patterns of the relationships among variables differ" (p. 45). This is, of course, the basic consideration which gives rise to contributions made by the *system* to the relationship between variables. In discussing systemic contributions, the authors distinguish three major factors: diffusion patterns; settings; and contexts (aggregates of individual characteristics). The discussion of diffusion (Galton's Problem—to which Narroll has recently devoted much attention) is very brief. The debate about diffusion has hinged upon whether a pattern of relationships in a given system is the consequence of diffusion or whether it is a functional relationship. The seeming intractability of this methodological problem is not a reason for not excavating it. This is an especially important point in view of the authors' commitment to theoretical and explanatory issues. One of the points they might have looked at in this connection is that a pattern of relationships may be a consequence of diffusion and at the same time be highly functional. For diffusion to occur successfully in the first place it has by definition to have a functional "home to go to." The discussion of settings is also not entirely satisfactory, mainly because it omits the crucial factor of *cultural variation*. The authors might well consider that they have taken care of this through their inclusion of historical settings (along with institutional, external, behavioral, and physical settings), but here again the commitment to a concern with theoretical problems makes this a worrying gap. In any case, the treatment of historicity is not entirely consistent—for subsequent to mentioning history as a major setting variable, the authors maintain that general laws are necessary in order to explain the properties of any historical event. Thus, "history" does not retain its status as a setting variable.

Przeworski and Teune echo the argument that in discussing problems and making inferences in connection with different levels in a system our aim ought not to be the listing of fallacies but the theoretical interpretation of the observed differences between individual and ecological correlations. They make their point very successfully in reference to the case in which within-system regressions are the same for all systems and are about equal to zero, but the slope of the regression of system means is different from zero—well exampled by the absence of a relationship between blackness and illiteracy within American states, but an increasingly strong association at the levels of state and region. The authors not only provide an extremely useful sensitization to this problem but also a valuable technical discussion.

It would seem that the topic which Przeworski and Teune regard as most important is that of measurement—particularly the problems in-

volved in obtaining equivalence of measurement with reference to a plurality of systems. The major concern here is to facilitate the context of a system to enter the process of measurement—a process yielded by identifying the subpopulation of indicators relative to each system. However, the notion of context is used here very differently from their previously explicated notion of a contextual (that is, aggregative) setting. In fact, it sounds very much like culture. That Przeworski and Teune emphasize the need to construct equivalence measures across systems such that characteristics specific to the systems in question are given full attention is very welcome. However, most of their arguments in this respect are pitched at the level of *principle;* the actual in situ problems of finding equivalence measures are touched upon only in reference to the International Studies of Values in Politics—a project from which many of the comparative problems dealt with in the book derive.

Generally speaking, this is an extremely useful contribution to the methodology of comparative analysis. But it is certainly not exhaustive. The absence of attention to cultural variation in any explicit form has been given particular attention here. The emphasis on measurement, although fruitful simply in terms of what the authors propose in respect to measurement per se, tends to gloss over not only the problems of culture but also problems of conceptualization and definition. This is not to say that Przeworski and Teune are incorrect in advancing their main theses. The problem is, rather, that their arguments would have been even more effective had they systematically related them to some of the more conventionally understood major problems of comparative inquiry. In this connection, their failure to connect with the problems raised by Scheuch in his examinations of levels of analysis and cultural variation is particularly glaring. However, no one can doubt the importance of their two main conclusions: that specific systems should be regarded as labels for unspecified factors as opposed to limits upon generality, and that the equivalence of measurement statements should be a matter of the validity of inferences rather than of the nature of indicators. In its sensitivity to explanatory theory, this book stands above the vast majority of essays on problems of comparative research. Students of comparative analysis will benefit enormously from the subtlety with which the authors set down the basic guidelines for work in this area.

International Systems and the Modernization of Societies. By J. P. Nettl and Roland Robertson. New York: Basic Books, 1968. Pp. 216. $5.95.

Politics and Change in Developing Countries. Edited by Colin Leys. Cambridge: Cambridge University Press, 1969. Pp. viii+289. $7.50.

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It is usually encouraging to see established and imaginative scholars seek to break out of traditional but increasingly anachronistic disciplinary or

methodological molds. The results can be suggestive and stimulating, even if the tentativeness of their findings proves frustrating to the reader, and sometimes unrewarding.

We are all acquainted, however, with the pitfalls which await those having the intrepidity to undertake such intellectual excursions. Some try to disguise their confusion in a pedantic style and a structurally weak overarching synthesis of unfamiliar material. Others, seeking safety in numbers and lacking a well-organized format and a common understanding of the problem, go off in a variety of disconnected and unilluminating directions.

The two books here under review exemplify both this admirable desire to explore new territory and the unfortunate consequences which too frequently attend such efforts.

Nettl and Robertson in their volume have sought to counter the tendency of most sociologists to focus exclusive attention on the national entity by underlining "the dynamic relationship between the international and the domestic aspects of individual societies" (p. 60). Examining modernization as a function of the relative acceptance or rejection by nationally defined Third World elites of the differing goals, values, and norms of colonial or other groups of external "benefactors," they suggest a comparative approach to the study of the process of modernization within which "development" becomes less the product of unseen (usually economic) forces largely beyond conscious human control, and more a process directed by national elites aware of the variety of choices before them.

In so doing, they dismiss the outmoded notions of the macro-economists, whose growth models were based on now-suspect data and whose theories implied the predominance of nonmanipulative forces. Instead, they offer a reformulation of the concept of modernization which emphasizes noneconomic factors so as to divorce the term "industrialization" from any prescriptive connotation or necessary association with "modernity" (industrialization being only one of several strategies for achieving it).

So, too, instead of the traditional bent of sociologists to stress structural differentiation within societies, Nettl and Robertson "find the term modernization meaningful mainly in the context of a differentiated international system" (p. 45) wherein national elites seek a moving goal of equivalence with other nations. For this reason, they suggest, it is imperative for the sociologist "to include international relations within his purview" (p. 137).

The authors therefore lay stress on the form and degree of communication in and between societies and the prismatic role of national elites in affecting the course of modernization in their societies. In so doing, they describe a process of "inheritance" from the perspective of Third World "beneficiaries," whose values, goals, and norms define the inheritance situation and significantly affect the degree to which (and manner in which) the inherited bounty from the modernized world is to be used, ranging these on a reform-to-revolution spectrum of political options.

Basing their argument on existing theoretical literature rather than on any significant empirical evidence, Nettl and Robertson disclaim any intention at thoroughness, and profess only a wish to call attention to the utility of applying sociological tools of analysis to the modernization process, as seen from an international point of view. The result, however, is an often confusing and regrettably verbose speculative disquisition which leaves the reader furiously jotting down exceptions and oversights which it would be supercilious to list here. Besides, this may well be considered more a compliment to the authors than a legitimate reviewer's complaint, given their repeated disclaimers.

On the other hand, a compendium such as Colin Leys has edited might have proven a fitting antidote to Nettl and Robertson's speculative essays. This volume being based upon a conference at the Institute of Development Studies at the University of Sussex in 1968, I expected a series of well-researched, data-based, and carefully focused studies illuminating various facets of Nettl and Robertson's benefactor-beneficiary relationship, seen from a variety of disciplinary and methodological viewpoints. It is operational questions relating to this relationship which many of us hoped the Institute had been established to explore, and which Leys's discursive introduction to the volume leads the reader to anticipate. Yet the book in fact is little more than a potpourri of disconnected, uneven, and otherwise unpublishable articles, which lack any unifying theme, summary overview, or scholarly justification—except as the increasingly inevitable marketed result of the current academic disease of "conference-itis."

This is not to demean indiscriminately all of the contributions to the volume. These range from Nettl's intelligent but anticipated plea for a less deterministic approach to the subject of modernization, to another unhelpful discussion of the military and political development (this one largely an inconclusive "case study" of Ghana by Robert Dowse), and an elementary essay on the possible relevance of the Soviet model of development for Third World countries by Alec Nove (ending with the marvelously uninspiring peroration: "Yet surely Russia's experience is one from which many useful lessons, positive and negative, can be drawn" [p. 84]).

The collection does include a pleasant little essay by Joan Vincent mainly on the potential place of anthropology in the study of political development and an instructive explanation of the case for (and relevant problems which need to be dealt with by) those working in the field of development administration by Bernard Schaffer. W. H. Morris-Jones has contributed an all-too-brief statement on the importance of having more research into the concept and process of political recruitment, and Leys has concluded the volume with a demand for more behavioral and less "logical" models of national plan making and for a shift "from models of plan-making to models of planned behaviour" (p. 275).

What we have, then, in these two books is, in the one case, a suggestive but inconclusive reassessment of the scope and focus of comparative so-

ciology and, in the other, the possible beginnings of an attempt on the part of British scholars to show some interest in utilizing some American tools of analysis in exploring the vast British involvement in the Third World's impulse toward modernization. Yet both fall embarrassingly short of what one would expect of authors of the reputation and competence involved in these efforts—testifying (one fears) to the American rush-into-print syndrome which may now be affecting scholars on both sides of the Atlantic.

Social Theory and African Tribal Organization: The Development of Socio-Legal Theory. By Kenneth S. Carlston. Urbana: University of Illinois Press, 1968. Pp. xi+462. $10.00.

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In this book K. S. Carlston (College of Law, University of Chicago) proposes his view that law is most fruitfully seen within its entire sociocultural matrix, rather than as a thing in itself, or from the point of view of any one discipline. For this reason Carlston offers a study of law from the vantage of a unified body of social theory. The theory is set forth in a lengthy but compact set of propositions, twenty illustrative ethnographic sketches of African tribes, and a series of conclusions drawn from comparisons of the tribes in respect to his propositions.

Carlston models his "unified social scientific theory" after an idealized, purified anthropological theory. All the other social disciplines are too narrow of view. Anthropology alone takes man in all his dimensions as its object of study. However, praise for wholism of view is accompanied with criticism that anthropology has remained "preoccupied with, though not limited to, tribal man." Moreover, anthropology has not developed sophisticated theory, but has remained "largely a technique of observation and description. The anthropologist is, in essence, a trained observer" (p. ix). Much more damning, he finds there is a subtle but very basic tendency toward ethnocentrism in anthropological concepts and judgments. Anthropologists are said to tend toward defining such terms as "law" in such a way as to reflect our own institutional arrangements and thus obstruct a comparative study of law (pp. 23, 53-63). All the prominent anthropological jurisprudents are faulted, but E. A. Hoebel is singled out for criticism (p. 62). This is ironic for it is clearly to Hoebel that Carlston is most indebted intellectually, although he does not acknowledge this. It is an anthropological view of law in society and culture which Carlston offers, but one supposedly cleansed of ethnocentric concepts, theoretical naïveté, and rustic interests. These are all worthy and ambitious aims and would doubtless promote not only a greater understanding of law, African culture, and human society but also the development of African nations and a world community, Carlston's ultimate interests (p. xi et passim).

The basic proposition of Carlston's theory is: "*Man* performs *action*, which is both *symbolic action* and *social action*, in the dimension of time to create order for the purpose of realizing his *values*" (p. 64, Carlston's italics). Each italicized term is a section heading for a group of "principles and propositions," which total 113 in number. This set of propositions resembles a formal postulational model, although whether this is intended is not indicated. Nonetheless, it is not a postulational system for there is no deductive relationship between the "basic proposition" and the subordinate principles and propositions. Moreover, there is a high redundancy in the "principles and propositions" (e.g., the seven "propositions" numbered 45, 50, 51, 71, 72, 73, and 108 actually state only two propositions among them), and there seem to be some mutually contradictory propositions, although possible ambiguities prevent documenting this.

The very construction of the set of propositions raises doubts in my mind. The theoretical writings from individual and social psychology, anthropology, sociology, and political science are culled putatively for propositions consonant with the "basic proposition," but it is also evident that Carlston uses other unstated canons which are thus not critically examined. Seemingly, each section of propositions consists of those basic theoretical statements which Carlston feels are most useful and reasonable from each of the behavioral sciences. This seeming eclecticism is all too much like the naïveté and lack of theoretical sophistication which Carlston criticizes in other social scientists.

Perhaps Carlston's own blind spots are best seen in relationship to the data he brings to bear on his theory, where he shares the faults he attributes to anthropologists (fascination with the primitive and ethnocentrism). His ostensible aim is to illustrate his theory by using the concepts and relations in the theory to describe the cultures of twenty African tribes, and to show the relationships between the tribal organization and possible national and international levels of integration, and to do so in a way superior to that of anthropologists. However, the ethnographic sketches do none of these. In fact Carlston uncritically follows the ethnographic accounts of the anthropologists, failing to catch them up about the genuine ethnocentrisms and naïveté in their work (e.g., the full acceptance of Evan-Pritchard's account of Nuer leaders not having "real authority" because they lacked the *European* trappings of authority [pp. 357–79]). Also, in describing the lawways of these primitive peoples, Carlston uses as the hallmark of law *sanctions* in response to conflict, and decisions disposing of cases in terms of appropriate rules *the society desires to universally bind behavior* (i.e., justice). Carlston is free to define "law" in any way he chooses, but I find sanction and justice to be no less ethnocentric considerations than those of which Carlston accuses Hoebel (i.e., "law" is defined by Hoebel as existing in those situations in which there is an agent with the legitimate right to use or threaten physical violence to uphold a norm) (pp. 58–63). To define law in terms of justice, for example, eliminates from theoretical purview the

study of law in revolutionary, despotic, or even rapid social change situations. These latter conditions are the very central interests in Carlston's work. Finally, how a study of the twenty *primitive tribes* of Carlston's sample will help enlighten us about *national* and *international* integration is not at all evident. They seem to have been reviewed solely for their own fascinating qualities. Perhaps anthropologists should feel embarrassed that right-minded social scientists forget their caution and rigor when presented with their exotic ethnographies.

The last section, "Conclusion," has little to say, since the data section was not meant to test the theory but only to illustrate it. It consists of noting some correspondences in the data of the several tribes to the propositions of the theory, although many of the noted correspondences are in error (e.g., on p. 385 the organizationally simple, egalitarian Nuer is given as an example of people having a high god because they are "societies with a complex, hierarchical structure"; conversely, nine of the tribes which could have exemplified proposition 1.1.4. are omitted), and nothing of significance can be concluded from the listings, as Carlston himself notes (pp. 90, 92). He nonetheless attempts to draw some conclusions about the potential for conflict or its lack as the people of tribal organizations attempt to integrate themselves into "modern structures of organization" (chap. 18, "Modern Implications"). This section is best dismissed as loose generalization.

Carlston's aim of a science of law within the context of a unified social scientific theory is worthy and valid. But both a more sophisticated unified theory with genuine grounding and a more sophisticated approach to law in that context are required.

Saints of the Atlas. By Ernest Gellner. Chicago: University of Chicago Press, 1969. Pp. xxiii+317. $9.50.

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Logically elegant but empirically simplistic, Ernest Gellner's analysis of rural Moroccan political structure in the British anthropological tradition attempts to reduce the complexities of Berber social relations to the rigid framework of a segmentary model—and is unconvincing. Gellner, who is professor of sociology at the London School of Economics, began his scholarly career in philosophy, publishing two books in this field (*Words and Things*, *Thought and Change*) turning only later to social anthropological research. Perhaps this early interest explains the aura of abstract intellectualism that pervades the present volume.

The "saints" of the title are living Moroccan holy men, whose powers of relaying Allah's blessings to ordinary mortals give them access to political influence at many levels of North African society. A group of related saintly villages, scattered among the larger lay population of

partially transhumant shepherds and farmers, formed the focus of Gellner's field work. He maintains that the lay population—here Berber-speaking and until 1933 outside the sovereignty of the Moroccan kingdom—can best be understood in terms of the model of "segmentary societies," as an array of nomadic cohesive kin groups, internally fractionated according to a treelike image of linkages. A semblance of political integration is maintained, precariously and at the cost of considerable violence, primarily through the principle of complementary opposition. That is to say, the balancing off of feuding groups against one another, in constantly shifting alignments, obviates the need for an overarching state. The saintly lineages are treated as outside the segmentary system, as, in Gellner's phrase "artificial foreigners," shielded by moral neutrality and armed with supernatural powers. This position enables them to perform as mediators among the "egalitarian feud-addicted tribesmen" whenever the political equilibrium is threatened. Thus the function of the saintly lineages is to provide an emergency gyroscope-like mechanism which ensures the steady state of the system.

This is a conceptual model, so it is not expected to describe reality exactly, but only to approximate it and to raise further questions. Its usefulness is measured by the proportion of the data it can account for, as against the amount of data which must be dismissed as incidental variation. Unfortunately, Gellner provides us with very little with which to make this judgment. Much of his reporting is at a level of generality which makes it difficult for the reader to tell whether he is giving a summary of many observations or a reasoned guess as to what "ought" logically to be the case on the basis of one or two items of information. His data are weakest and least circumstantial precisely where they are most needed for a test of his thesis: on the day-to-day political relationships among and within the nonsaintly groups prior to the imposition of French authority. These are not the groups among whom he was resident, and what information he seems to have is secondhand, retrospective, sketchy, and idealized.

His best descriptions (and these are tantalizingly interesting) are of the internal structure of the saintly villages between 1954 and 1961, the period of his field work, but this particular material is either irrelevant to the central thesis or else contradictory to it. It is irrelevant if the main assertion of the model is taken to mean that the saintly villages are not at all like nonsaintly ones. It is contradictory if the saintly villages are thought, as Gellner sometimes also suggests, to be merely specialized variants on general Moroccan rural organizational patterns. For the segmentary model assumes a strict equality within and between segments, both ideally and actually, so that they can balance each other off. However, in an intriguing series of comparisons of several saintly villages in the region, which range from being highly peaked to almost flat in the distribution of wealth and political influence, he accounts for the differences among these saintly villages in terms of the presence or absence in each one of what he calls "effective" saints. These are persons of

saintly descent on whom the popular consensus has conferred the active possession of spiritual powers, an attribute which by no means is guaranteed by birth. They are the men who actually carry out the arbitration among the competing lay groupings. Many saintly villages are indistinguishable from lay villages, since they have no effective saints and are correspondingly unstratified. Gellner argues that without the presence of effective saints there can be no stratification within these communities and that the "normal" condition of Moroccan mountain social structure is egalitarian and segmented, not hierarchical and interlocked.

On the basis of what we know about the mountain communities, including Gellner's own reports, it is by no means clear that the saintly villages are sharply different from the nonsaintly, nor that the situation was so prior to "pacification" in 1933. While the segmentary model bears some resemblance to reality, it leads to a markedly inadequate and, I think, distorting interpretation of it. In a society which strongly values force of personality and the capacity to grasp opportunities and to get things done, whether this capacity is based on mobilization of kinship resources, activating claims on clients, economic calculation, manipulation of foreign interests, or access to divine aid, a sociological model which aspires to more than plausibility cannot afford to limit itself to only a few simple principles. It should have sufficient complexity to encompass not only the relationships among the long-range transhumants, an image of which provides Gellner with the basis for his argument, but also those of the settled villages and the sophisticated cities, which must be treated as aspects of a single society.

As one of the first structural studies of Morocco, the book is disappointing. Its virtues are the reverse side of its faults: there is a refreshing sweep and intellectual clarity in its arguments and a singleness of point of view that make *Saints of the Atlas* continuously interesting.

Parliament, Parties and Society in France, 1946–1958. By Duncan MacRae, Jr. New York: St. Martin's Press, 1967. Pp. xiii+375. $10.00.

Case-Studies in Social Power. Edited by H.-D. Evers. Leiden: E. J. Brill, 1969. Pp. 161. Gld. 25.

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The Fourth French Republic has often been cited as an example of a political regime that failed. Even before the establishment of the Fifth Republic in 1958 under the leadership of General de Gaulle, and much more so thereafter, the shortcomings of the Fourth Republic and the reasons for its downfall have been the object of many brilliant if somewhat speculative studies. While most of them view cabinet instability as one of the main causes of the Fourth Republic's failings, no exhaustive

empirical analyses of "legislative behavior" in the Fourth Republic have so far been published.

Duncan MacRae's study has filled this void. Using a wide variety of data, techniques, and evidence (his research is based on statistical analysis of Assembly roll calls, aggregate voting statistics, and survey data as well as newspaper accounts and sociological analysis of the French social structure), he centers his investigations on the sources of cabinet instability, leaving aside other issues that contributed to the downfall of the Fourth Republic.

Dealing first with the divisions and performance of the different parties in the Assembly, he then links the "legislative behavior" he observes to the broader political and social context of France. Altering or sharpening a good many previous hypotheses, he not only gives an illuminating account of the Fourth Republic's parliamentary system but also points out basic problems the understanding of which is indispensable for anyone concerned with the mechanisms of French political life.

The book can be roughly divided into three parts. After the presentation of basic features of the French social structure and political institutions in a first, largely introductory part (chaps. 1–3), the author devotes Part 2 (chaps. 4–7) to a statistical analysis of intraparty divisions which he considers one of the main sources of cabinet instability. For each legislature, he provides a detailed chronology of the rise and fall of the different cabinets and analyzes each party's internal divisions on selected roll calls. Chapter 7 then sums up the different findings of this part through an overall appraisal of intraparty divisions related to issues (i.e., ideological cleavages) or cabinets (i.e., cleavages resulting from cabinet alliances).

The statistical evidence collected by MacRae in this part greatly renews our knowledge and understanding of the Fourth Republic's parliamentary system. Contrary to well-accepted analyses, short-term cabinet alliances and the intrigues of would-be ministers ("ministrables") do not seem to have been an important source of cabinet instability. The data suggest on the contrary that the "ministrables" consistently supported the cabinets and that *ideological dissensions among the rank-and-file deputies* were the main cause for the downfall of most of the cabinets. The author therefore hypothesizes the existence of two subsystems working somewhat at cross-purposes: *consensus* in the Assembly, among the parliamentary leaders, and *dissensus* of ideology and interest rooted in the constituencies and of which the rank-and-file deputies were the mouthpiece.

This conclusion then leads him to trace the sources of cabinet instability outside the Assembly, through the study of the social bases of voting behavior and of party differences in constituency relations (chaps. 8–11). He shows that, while stable social divisions—resulting in stable clienteles for each party—had some negative influence on cabinet stability (no party being able to gain sufficient seats from the others, they had to enter governmental coalitions, a fact which considerably strengthened consensus among parliamentary leaders), they were only permissive con-

ditions for political divisions. These divisions, and the ideological character of French politics, could not be traced back to constituency influences. Rather, the author contends that they sprang from the existence of a highly ideological and politicized minority of party activists, upon whom the rank-and-file deputies depended much more heavily than the "ministrables" and whose influence can be traced to the political parties' organizational structures.

This outstanding study, integrating analyses of particular aspects of French society carried out with a wide variety of data and methods, exemplifies useful lines of research in political science. One can only hope that it will be followed by many more of the same quality and scholarship.

Of course, some concepts used by the author may need further clarification. For example, his distinction between "issue-specific" and "cabinet-specific" intraparty divisions, although clear in principle, may sometimes prove difficult to apply. Into what category does the opposition to P. Mendès-France's cabinet fall? While clearly cabinet-specific, can it not also be due to the deputies' aversion to his constitutionality theories, viewed as threatening the preeminence of the Assembly? Indeed, Mendès-France was an ideological issue.

One could also object that the author introduces too radical a dichotomy between rank-and-file deputies and "ministrables." Although they belonged to separate subsystems, a high degree of complicity did exist between them—if only in view of the defense of the "system." The social system of the Assembly as a whole therefore deserves perhaps a more thorough and qualitative study, for it may have some implications for the author's findings. One could argue, for example, that the "ministrables" did not actually have to vote against a cabinet to bring it down. Perhaps simply refraining from openly coming out in favor of it was understood by the rank-and-file deputies of the same faction as a signal to vote against it. The "ministrables' " responsibility in cabinet instability could thus be much greater than the statistical data would suggest.

However, as the author himself states, he intended to provide a statistical study of legislative behavior in the Fourth Republic, dealing with quantitative data. More qualitative analysis, although started in the last two chapters, is not in the line of this research. But it should be the object of further and very important studies.

In its field, the book fully attains its objectives. The amount of original statistical data collected, and the way they are presented—permitting everyone to reach his own conclusions—would alone be sufficient to put this book on the top of the reading list of students of political behavior and of French politics alike.

But there is more. For this book is not only a historical analysis of a regime that failed. In his main conclusions, the author in fact points out basic problems of the French social and political structure which did not fade away with the Fourth Republic. The existence of vertical communication channels, preventing bargaining and interorganizational adjustments at the base, and of a very restricted elite at the top, which

alone can bring about the necessary synthesis of conflicting rationalities (dissensus at the base, consensus among the leaders at the top), has been diagnosed in many different segments of French society and still characterizes what could be called the "French style of action." MacRae thus enhances our understanding of the underlying mechanisms of French political life and of the conditions of change.

The very centralized form of government in France seems to indicate a society where power is both highly structured and institutionalized. The selected articles edited by H.-D. Evers in *Case-Studies in Social Power*, on the contrary, have in common that they deal with societies where the power structures are diffuse or amorphous.

The papers of this volume—all based on field research in the respective societies—deal with power structures in a wide variety of societies, ranging from an African tribal society to complex industrial or postindustrial societies, from a small community to a large labor union or a national elite.

The very diversity in methodology and subject matter of the articles included (the studies are not written from a common point of view nor have the writers used the same theoretical framework of analysis) makes it difficult to give an overall judgment on the book, but necessitates a discussion of every article for itself, which of course exceeds the aim of this review.

A good many of the articles included are interesting to read; I especially liked the contributions of Gilbert D. Bartell, Lloyd H. Rogler, and J. David Edelstein, both for the subject matter and for their findings.

But the volume as a whole leaves one unsatisfied. This may be due to the shortcomings inherent in this kind of collection of different articles, unrelated to one another on methodological or theoretical grounds, except perhaps for the common use of a very stretchable concept such as "diffuse power." Assuredly, the editor recognizes this lack of unity in his unfortunately much too brief introduction. In his own words, the volume is not aimed at producing "any coherent picture of power in different social systems, but . . . a number of case studies which would show the diversity and possible diffuseness of power structures in different societies" (p. 2). But this does not really solve the problem. Indeed, it seems that the editor could have chosen some middle road, selecting the different contributions more carefully in reference to some topic matters fixed in advance, so as to ensure a minimum of unity. The overall objectives of the volume might have been less global, but the significance of the book for cross-cultural analysis of diffuse power structures would have been greatly advanced.

Rebellion and Authority: An Analytical Essay on Insurgent Conflicts. By Nathan Leites and Charles Wolf, Jr. Chicago: Markham Publishing Co., 1970. Pp. xii+174. $5.95.

Why Men Rebel. By Ted Robert Gurr. Princeton, N.J.: Princeton University Press, 1970. Pp. xi+421. $12.50.

James F. Short, Jr.
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Both of these books are concerned with that type of political violence known as rebellion, and the acknowledged purpose of both is generalization and theory. Each seeks to accomplish its task by surveying research and other literature considered relevant and by abundant illustrative examples. Support by the Advanced Research Projects Agency of the U.S. Department of Defense is acknowledged by the authors of both volumes, with the customary caveats concerning such support.

Here the parallels largely end. Gurr's focus is stated in his title: *why* do men rebel? Leites and Wolf are preoccupied with the *success* or *failure* of rebellion and its converse, the success or failure of authority in avoiding and resisting rebellion. Differences between the volumes are greater than is implied in focus, however. For Gurr, the fundamental and prior problem has to do with the social and psychological forces which cause men to rebel, while Leites and Wolf seem almost to assume the inevitability of rebellion and set about to discern and inform its nature. Gurr finds his answers in the enormous literature of scholarly disciplines, particularly in the sophisticated quantitative analyses of political science (to which he is a distinguished contributor), in economics and history, and in the more traditionally behavioral sciences of psychology, sociology, and anthropology. He develops his theory systematically in the form of hypotheses and corollaries, specifying the form and strength of relationships among variables. Where the research literature is inadequate to answer his questions, or to support his hypotheses, he is often at pains to discuss methods by which such answers and support (or lack of support) may be obtained. Leites and Wolf clearly are cognizant of this scholarly literature, but their treatment of it is sketchy and they find much of it at fault. They draw their inspiration instead chiefly from the formal models of economics and the rich literature of practical men—politicians, professional military men, insurgent leaders, and theorists. The contrast in the two books in this respect is so great that their references scarcely overlap.

Differences such as these are not attributable merely to questions asked but reflect fundamentally different perspectives. The "integrated theory of political violence" toward which Gurr strives is based on relative deprivation, defined more broadly than in reference group theory as "a perceived discrepancy between men's value expectations and their value capabilities." While Leites and Wolf do not directly challenge relative deprivation as an explanatory hypothesis—indeed they do not even mention the phrase—their primary attack is on what they term the "hearts-and-minds theory." Relative deprivation and hearts-and-minds

cannot by any means be equated. Yet there are similarities. Both stress economic as well as other types of deprivation and in this sense are "demand" theories, and both are concerned primarily with the internal dynamics of political systems. Leites and Wolf view rebellion as a system and employ a cost-effectiveness perspective in analyzing and prescribing strategies calculated to enhance the success of rebels and authorities within this system. They assume rationality on the part of both rebels and authorities; they view "apparent irrationalities" as mistakes, uncertainties, the product of misinformation or insufficient information, etc. "Sympathies" and ideologies are decidedly secondary in their scheme of analyses Indeed, they stress that rebellion does not depend for its success on popular sympathy and that "the essential material and human input required for the existence of R [rebellion] need only engage a small fraction of the population"; and the trade-off of endogenous and exogenous support for rebellion and for authority is essential to their analysis.

Gurr defends the primacy of "nonrational" motivation to act violently out of anger, based fundamentally on frustration, although he acknowledges that utilitarian justifications for political violence are "highly consequential," and he attempts to integrate them into his theoretical model. He states that "the greatest potential increment to dissident military capacity is external support," but does not systematically examine the role of such support. And so it goes.

It seems important, finally, to note that perhaps the most fundamental difference between these volumes lies in the fact that Leites and Wolf write essentially as policy scientists while Gurr adopts the more traditional scholarly posture. The authors of both volumes come to their tasks with formidable credentials, and the products of their efforts are impressive. I find myself worrying, however, lest those with political power—and particularly with military power—accept the assumptions urged by Leites and Wolf of the virtual inevitability of rebellion, and concentrate entirely on strategic and coercive aspects of the struggle between rebellion and authority to the neglect of the problems which both Leites and Wolf, and Gurr, recognize as underlying the conflict. Control seems always easier to "sell" than do "root causes" and solutions. The policy challenge to all behavioral sciences seems clear and urgent.

The Los Angeles Riots: A Socio-Psychological Study. Edited by Nathan Cohen. New York: Praeger Publishers, published in cooperation with the Institute of Government and Public Affairs, University of California, Los Angeles, 1970. Pp. xxxii+742. $20.00.

Institutional Racism in America. Edited by Louis L. Knowles and Kenneth Prewitt. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969. Pp. xii+180. $5.95.

Racial Violence in the United States. Edited by Allen D. Grimshaw. Chicago: Aldine Publishing Co., 1969. Pp. xviii+553. $12.50.

Ralph H. Turner

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Here are three very different kinds of books dealing with racial tensions in America. Under the leadership of Nathan Cohen, an interdisciplinary team from the UCLA faculty was quickly organized to study the 1965 Watts holocaust. The principal empirical endeavors were a field survey of 585 blacks in the curfew area and a field survey of 583 whites from selected neighborhoods. The questions asked were of immediate public or practical interest, but they are formulated and the data analyzed with sufficient sophistication to be amenable to serious theoretical interpretation.

The volume opens with a concise but comprehensive summary of major findings and a set of recommendations directed toward ameliorating social conditions, with principal emphasis on the "survivalists"—the 40–45 percent of Negroes pervasively concerned with economic frustration. Approximately half of the book is devoted to analyses of data from the curfew area sample, supplemented by a sample of 124 arrestees. The latter seem not to have been the militant, ideologically sophisticated core, but the looters. The main outlines of the findings come out in the careful statistical analysis by Raymond Murphy and James Watson, including such observations as the wide extent of participation, support, and sympathy for the disturbance among blacks, and the suggestion that increased contact with whites enhances relative deprivation rather than strengthening favorable attitudes. In another unusually interesting chapter, T. M. Tomlinson explores the existence of a riot ideology that might be the foundation for future disturbances, through a close look at militants, identified as those who were favorable toward the Black Muslims. Walter Raine shows the widespread belief in various forms of police brutality, and David Sears and John McConahay find a surprising acceptance of conventional political institutions. Findings from the white sample are analyzed by Richard Morris and Vincent Jeffries, seeking determinants of reactions to the disturbance and attitudes toward Negroes. A supplementary study of ghetto merchants whose establishments were damaged reveals little empathy with rioters and their problems. In a concluding essay, the editor expresses concern that subsequent developments have been more toward law and order than toward large-scale programs for dealing with social problems.

It is not hard to find fault with a study so ambitiously conceived. One may ask whether Cohen's recommendations, with their flavor of the 1930s' New Dealism are incomplete in light of the character of militancy revealed by the research. The total commitment to survey research and the forms of analysis that compare categories of respondents neglects any attention to the processes and dynamics of the collective behavior itself.

Perhaps the urgent concern of the investigators for the admirable objec tive of promoting understanding for the rioters' point of view kept then from exploring all important leads. Most of the contributors rightly stres frustration as the underlying cause but fail to develop the strong indica tion from their data that hope is the obverse component. Militants ar more hopeful than others of positive change in race relations and favo use of political as well as violent means; few blacks feel that the riots hur their cause; and attitudes toward the federal government and Demo cratic party are surprisingly positive. If riots stem from despair, the dis appointing aftermath of each riot should precipitate yet another riot; bu if frustration coupled with hope is crucial, the usual riot should inocu late the community against further riots for a period.

In spite of any limitations, the range of questions investigated, th sophistication with which questions were designed to answer these ques tions, and the high standards of data collection and analysis make thi undoubtedly the most important study of an interracial disturbance nov available. It is unfortunate that work of this importance should have beer published in typescript-offset and priced at the discouraging figure o $20.00.

Institutional Racism is a brief and incomplete catalog of ways in whicl institutionalized practices in American society either give legitimation t deliberate racial discrimination or cause unintended racial bias. Topic covered are ideology, economic life, education of blacks and whites, an legal and political institutions. The book is primarily a document record ing conclusions reached by a team of Stanford University students work ing in the community, and a call to action, with proposals for dealing wit racial inequality. The solutions to institutional racism are to reform whit institutions, working toward this end through a participatory democracy while allowing blacks to control their own communities and solve thei own problems.

Unfortunately, examples of sloppy scholarship are rife. On page 82 w read that gerrymandering dilutes Negro power at the polls in Los Ange les, while on page 155 we are told that blacks have greater than thei share of representation in the Los Angeles City Council; we hear tha American expansion was justified by Social Darwinism—an expansio largely completed before publication of Darwin's work; we are told au thoritatively what Black Power means, when any serious student know that it means different things to different blacks in different situation the IQ is given so simplistic an interpretation as to embarrass the seriou scholars on the environmentalistic side that the authors endorse in carica ture. The authors' call for strict reinforcement of building codes in ghett areas runs counter to the demands of many ghetto leaders, for reason well known to any sociologist. The legitimate demand that schools sto trying to make whites out of black children should have been qualified b asking how many blacks themselves reject ghetto culture and whethe ghetto culture is partly an adaptation to exclusion from the mainstrean that deprives the individual of motivations needed to win a share o

benefits in an industrial society. Specific prescriptions, such as making real estate agents change their ways and making home loans easier for blacks to secure, lack attention to problematic aspects of making such proposals work. And the uncritical faith in participatory democracy runs against much evidence that shifts from representative to participatory democracy in recent years have been a recurrent impediment to the reform of discriminatory institutions.

I am tempted to be generous because these people are on the right side. But if our vision is distorted by the well-known principles that virtue is often accepted as a substitute for competence, and that indignation is a sure sign of virtue, we debase the problem being attacked. The consequences of diverting reformist energies into unproductive courses of action on the basis of faulty diagnoses and self-defeating action proposals are too tragic for us to applaud careless work.

Grimshaw has filled an important gap in sociological literature by assembling a comprehensive historical and analytical account of collective interracial violence involving whites and Negroes in the United States. Grimshaw's brief introductions to each chapter and some twelve published and unpublished papers of his own make the book a considerably more creative effort than the usual book of readings. Approximately the first half of the book is historical, consisting of illustrative accounts of violence from the slave revolts to riots in the summer of 1967. Another ninety pages look analytically at various regularities concerning race riots, and a much longer section delves into causation. A final brief section considers questions of control and responsibility for interracial violence.

The readings in this volume are an unusually fine set, well written, important, and carefully pared down and excerpted by the editor for maximum impact and relevance. Most interesting for review purposes is the framework enunciated and used throughout the volume by the editor. The subject is racial violence, a form of *social violence* defined as "assault upon an individual or his property solely or primarily because of his membership in a social category," although in effect Grimshaw has limited himself to *collective* racial violence. The main causal-analytic proposition, familiar to students of Park, Reuter, and Wirth, is that serious racial violence erupts when a subordinate minority attempts to disrupt the traditional accommodative pattern between groups. Major violence comes with the dominant group's response to the subordinate group's refusal to accept that subordinate status. Grimshaw makes an interesting distinction between the traditional Southern race-riot pattern—now defunct, where provocation is in a sacred sphere such as sex, where the minority does not resist, and where the aftermath is to reestablish prior accommodations, and the Northern pattern of secular provocation, minority resistance, and disruption of prior accommodations as the aftermath. There is enough prejudice and tension that every American urban center is violence-prone, so explanations for differential incidence of violence must be sought in patterns of control and other features of community or-

ganization bearing on confrontation. The second half of the 1960s witnessed a change in the meaning of racial violence, from something far removed from the mainstream of civil rights activity to an integral part of the larger movement.

Grimshaw's style is admirably cautious, and his respect for the difficulty of making integrated interpretations of diverse phenomena merits emulation by students. But his orienting framework seems to fit better the events between Reconstruction and 1965 than either the earlier slave revolts or the "ghetto riots" since then. Violence still revolves about challenges to established accommodations, but the use of violence in the guerrilla manner by a minority group as an aggressive strategy is vastly different from punitive mass violence by people secure in the knowledge that they have the numbers and power to control the situation whenever they choose to resort to extreme tactics. Grimshaw's failure to take notice of the significance of Third World ideology, of the important part played by the omnipresent threat of violence in the "nonviolent" civil rights movement, the social legitimation of Negro rage, and other elements in the new pattern makes the book better as an interpretation of the past than as a perspective on the 1970s. In summary, this is a pioneering work, exceptional in its scope and the quality of the materials it includes, containing excellent descriptive and analytic accounts of events through 1967, and supplying an interpretative framework that is most valuable for the period ending with 1964.

Profession without a Community: Engineers in American Society. By Robert Perrucci and Joel F. Gerstl. New York: Random House, 1970. Pp. 194. $2.50.

The Engineers and the Social System. By Robert Perrucci and Joel F Gerstl. New York: John Wiley & Sons, 1969. Pp. xii+344. $9.95.

Jeffrey M. Schevitz

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Profession without a Community is a journeyman's job of sociological analysis of an increasingly important occupational group. The book covers well the social origins of engineers and engineering students, the education and professional socialization of engineers, the work settings within which engineering roles are performed, the professional-organizational conflict, variations in career patterns, and the interaction among family, career, and the larger community. But like any *respectable* sociologists, the authors never analyzed the way the fundamental values and institutions of American society shape engineering. For example, to what extent is there recognition by engineers (and what are the consequences of such recognition) of the fact that the majority of engineers must design and produce the hardware that satisfies "artificial" needs (e.g., new weapons systems, gadgetry, new model cars)? These needs are

created by corporate advertising to keep our capitalist economy going without redistributing the wealth.

Except for a discussion of the disruptive career effects of technological obsolescence, there is no discussion at all of the recurrent patterns of unemployment to which hundreds of thousands of engineers are subject in the "defense" industries. During 1963–64, approximately 30,000 professional engineers and scientists in the war-defense industries lost their jobs because of mass layoffs by firms throughout the country. It has been estimated by Loomba (whose important study was not cited) that these individuals remained unemployed for a period of three months on the average. Within the last year, according to the Aerospace Industries Association, another 30,000 scientists and engineers have been "surplused." Perrucci and Gerstl note that "Engineers experience considerable mobility between organizations" (p. 179). But the authors examine neither the causes nor the consequences of that mobility. Yet Loomba pinpoints a major determinant of intraorganizational mobility—unemployment. Loomba found that approximately one-quarter of the nation's war-defense industries' turnover rate is due to layoffs for lack of work. It is not clear why the authors avoided this very important issue, but it is clear that such an examination would have to question major American institutions whose operation produces such dislocations and job insecurity.

Another topic that received scant attention is that of the social responsibility of engineers (pp. 84–87). There is a table (pp. 102–3) that reports variations in professional values by degree level, but not by industry. Consequently, we know that "to contribute to society" is a fairly highly regarded value among engineers of all degree levels. But we do not know how important this value orientation is among engineers who design and produce weapons systems in contrast to, for instance, bio-medical engineers. Such an industry breakdown would allow us to ask questions about self-selectivity into industries and social control of engineers within various industries. My research and organizing among engineers has turned up actual instances of intimidation by employers and the government in response to engineers' statements in opposition to the war in Vietnam. Since a table in the same chapter (p. 124) does report an industry breakdown in examining organizational policies regarding encouragement and reward of advanced degree work, we can only wonder on what basis the authors chose their variables.

Heavy reliance on survey research apparently has removed the authors from the *real* activities of engineers who are concerned about the uses of their work. There is no mention of the Society for Social Responsibility in Science (founded in 1949) which includes engineers in industry, government, and academia; there is no mention of the Boston Industrial Mission (founded in 1964) which "initiates and encourages discussion, thinking and action among engineers, scientists, and management of the research and development industry"; and there is no mention of the Technology and Society Committee (founded in 1968), an organization

comprised primarily of industrial engineers and scientists in the San Francisco peninsula defense complex. TASC has over 400 members and associates. It has produced a film, *The Schizophrenia of Working for War*, and has a number of action "TASC Forces."

The Engineers and the Social System, edited by the authors of *Profession without a Community*, fills in many of the lacunae of the first book. Special attention should be accorded to the article, "Science, Business and the American Engineer," by the historian, Edwin Layton. Layton stresses the close association between the rise of industrial capitalism and the growth of engineering. He traces how "the engineering profession in America was called into being and shaped by the needs of large organizations, mostly private corporations" (p. 53). He documents how corporate capitalist organizations, with the goal of production for profit, not use, created and controlled the major engineering associations to prevent and quash movements of engineers to assert their social responsibility. Layton, however, sees the root of the problem of the social control of engineers not with corporate capitalist managers in particular but with bureaucrats in general. Yet Layton's data are all drawn from the American experience. There is no comparison with engineering in a noncapitalist society.

The cross-cultural analysis by William M. Evan covers an area neglected in the other book reviewed here. However, Evan is hemmed in by his methodological emphasis and his ideological blinders. Evan has a hypothesis that the number of engineering students and graduates in a country is directly related to industrialization as measured by GNP per capita. He reports, "The rank order correlation coefficients, though statistically significant, are rather modest [!] in size (.266 and .299) because of the *anomalous* position of several Communist countries. . . . In their [China, Romania, and Poland] effort to accelerate their economic growth, Communist countries have greatly expanded their facilities for the education of engineers" (pp. 113–14; my emphasis). Evan is more interested in excusing his low correlations than in explaining why the Communist countries have such large numbers of engineers. Could it be that socialist economies are more rationally directed toward satisfying the needs of the masses than the economies of other industrializing countries?

In general, the other articles cover in depth the topics adumbrated in the book *Profession without a Community*.

The Legislation of Morality: Law, Drugs and Moral Judgment. By Troy Duster. New York: Free Press, 1970. Pp. x+275. $6.95.

Peter Park

University of Massachusetts

In this book, Troy Duster argues persuasively that heroin should be made freely available through physicians and clinics in hospitals to those who seek it. His argument is based partly on the fact that "Opium ad-

dicts are incapacitated neither physically nor mentally" (p. 241) and on the reasoning that making the drug easily obtainable would eliminate secondary crimes presently associated with the "habit," would break the underworld ties with drug taking, and, finally, would restore the stigmatized addicts, whether or not "cured of the habit," as men morally and legally equal to other men. This last point is the overriding concern of the author, and the bulk of the book, one way or another, deals with the problems of being stigmatized as an addict.

This humane concern, which I find personally appealing, is couched in a broader sociological framework having to do with the "law-morality" issues. One of the issues raised is the question of whether or not morality can be legislated. In a generalized attempt to answer this question, Duster considers two dimensions of behavior in relation to morality and legislation: whether or or not the behavior is publicly performed and whether or not it entails victims. He then proposes the idea that moral precepts about public behavior entailing victims (e.g., exhibitionism) are the most effectively legislated, since laws are easily enforced in this sector and thus affect behavior. They are the least effective when dealing with private and victimless behavior (e.g., homosexuality among consenting parties), with the other categories of behavior ranging between these two extremes. This is a plausible formulation, according to which legislation against the use of narcotics should be ineffectual, as the author points out. But the fact appears to be that heroin addiction was more prevalent before the passage of the Harrison Act in 1914 than now, and Duster does not challenge this datum which is proudly publicized by the Bureau of Narcotics. (Similarly, there is strong evidence that the rate of alcoholism was lower during Prohibition than now.) Granted that legislation cannot rehabilitate drug addicts or alcoholics, I do not think that it is any more effective in rehabilitating exhibitionists. But when it comes to prevention, legislation may be as effective against one type of behavior as against another, provided that the law is diligently enforced. Thus the current narcotics laws cannot be opposed on this conceptual ground.

Another, related, issue which Duster raises has to do with whether morality or legislation comes first. Admittedly this is a "complex and subtle" problem, as the author realizes, and it may even be a "logically and substantively" senseless question, as he asserts. He sees this as a chicken-egg question. And yet Duster is lucid about how legislation concerning a behavior can change the moral climate from a neutral position to a negative one, as apparently happened with anti-heroin legislation of 1914. He also suggests in strong terms that those in power legislate against the behavior associated with the "vulnerable" class—the minorities, the young, the poor, etc. The use of narcotics indeed seems to have shifted from the secure middle class to a broader basis around the time the Harrison Act came into being, according to Duster's information, although it is not clear which came first. In any event, this issue not only is central to the problem of changing the law concerning the use of narcotics, which the author advocates, but also it cuts right down to the questions having to do with how deviants are created and managed in

and by society. Duster's treatment of this issue ("Empirical Approaches of the Study of Morality") is confusing and disappointing. It is Garfinkelesque not only in the methodological model which Duster adopts but also in the style of presentation.

The relatively fresh approach to deviance, which focuses on the process of being labeled as a deviant rather than on the psychic makeup of the deviant, works well in showing the reasons for the failure of the current efforts to rehabilitate narcotic addicts, including the well-publicized Synanon. From this perspective, a deviant is one not by virtue of what he is or even what he does but by being so labeled by the "community." In the moral sphere this labeling tends to be total; it blanks out the other identifications—and permanently—once a deviant, always a deviant. Duster shows how this process works in an institutional setting in the California Rehabilitation Center (where he has worked as a consultant and a researcher) from the time an addict is committed through his release into the hands of the parole officer.

This approach to deviance points up the social nature of such problems as drug addiction and alcoholism—they are social in that "society" defines them as such. But it fails to answer the question of why certain behaviors are considered problems; and this failure, I might suggest, is due to the tradition-bound ways of thinking about community and deviance which linger on even in the new brand of sociology which Duster practices. Community or society is still thought of as representing a mystical consensus of sentiments, as it has been traditionally in sociology, and moral judgment, such as labeling a deviant, which implies norms and community standards of behavior. This way of reconstructing human behavior in society persists in spite of the professed aims and actual attempts of sociologists of Duster's persuasion to examine the process whereby a person becomes stigmatized. Thus Duster suggests more than once that a moral climate can be created by men who are at the center of power, but he stops short of carrying this insight to the conceptual level where it might be useful in tackling the problems of moral judgment.

Be that as it may, *The Legislation of Morality* is a thoughtful exposé of the fallacies underlying the present narcotics policy; and its recommendations—to legally change the condition of the addicts—together with the supporting arguments should be placed in the hands of men who moralize, legislate, or stigmatize.

The Structure of Psychological Well-Being. By Norman Bradburn. Chicago: Aldine Publishing Co., 1970. Pp. v+310. $9.75.

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This major new contribution to our understanding of psychological well-being is the result of a large-scale sample survey of normal populations by

trained nonprofessional interviewers. The study was designed to determine how the problems of everyday life relate to the psychological well-being of ordinary people and is not concerned with the diagnosis of psychiatric disorders. More than 2,000 subjects were interviewed on multiple occasions in five different areas of the country ranging from the inner city to middle-class suburbia.

The closed-end interviews employed were designed first to obtain statements as to levels of happiness and second to obtain data about various positive and negative feelings related to psychological well-being.

In order to evaluate levels of happiness, subjects were asked to rate themselves as "very happy," "pretty happy," or "not too happy." One-third of the subjects described themselves as "very happy" and 5–15 percent as "not too happy." But more than 20 percent of the population in an economically depressed area described themselves as "not too happy." Women claimed no less happiness than men, but older persons claimed slightly less happiness than young people, possibly because of the increased physical illness associated with aging.

Measures of psychological well-being in the study were obtained by asking subjects whether they had experienced within the past few weeks a variety of positive and negative feelings. Two separate components of psychological well-being were identified: one of positive affect and one of negative affect. Since these two components are independent of each other, knowledge of a person's standing on one component does not permit prediction of his standing on the other. Neither a positive nor a negative feeling state has a significant relationship to self-reports of happiness, but the difference between the positive and negative is highly correlated with happiness and is known as the Affect Balance Scale. An individual experiences a sense of psychological well-being when he has an excess of positive over negative feelings. In contrast, when negative feelings are in excess of positive feelings, the individual experiences a diminished sense of well-being.

The Affect Balance Scale was studied in relation to the variables of sex, age, socioeconomic status, anxiety and poor mental health, marital status, and occupation. Women had slightly lower scores than men on the Affect Balance Scale, but there was little difference in the Affect Balance Scale among various age groups. Those with higher education and income in the study experienced higher positive affect and therefore greater psychological well-being. And those with low incomes and heavy responsibilities manifested lower psychological well-being. The increased positive affect associated with higher education and income was apparently due in part to the greater social participation occurring in persons of higher socioeconomic status. And much of the positive value of social participation was the increased likelihood of the participant's experiencing novel or varied experiences which increase his sense of well-being. Thus, those whose educations, incomes, and occupations placed them in a higher socieconomic status consistently manifested greater well-being than those in a lower socioeconomic status. Possibly also because of lower education and income, more Negroes than whites reported a low sense of well-being.

Anxiety and poor mental health were found to be highly correlated with negative but not with positive affect. Women subjects were higher in negative affect than men just as they were higher in the other various indicators of poor mental health.

Not being married was strongly associated with a decreased sense of psychological well-being, especially for those who had been separated, divorced, or widowed. Although not being married had a more negative effect on men, adjustment in marriage was more crucial to the psychological well-being of women. Marital tensions were associated only with negative affect, and marriage sociability and companionship only with positive affect.

Being unemployed for men had effects on both positive and negative affect. The reduced social participation caused by unemployment seemed to be primarily responsible for the reduced positive affect. And the greater worry and anxiety associated with the loss of a regular income was apparently responsible for the higher level of negative affect. Also learned from the study was that satisfaction with work and job status results in positive affect while feelings of inadequacy and dissatisfaction with work result in negative affect.

In summary, the authors have contributed an important new dimension to our understanding of human emotional function. At a time when creative planners of new health care delivery systems are questioning whether a system which narrowly concerns itself with sickness can properly consider itself a health system, these authors similarly demonstrate that mental health, or "psychological well-being" as they prefer, is more than the absence of mental illness. Convincing evidence is presented that "psychological well-being" or "happiness" is the surplus of positive over negative feelings—that a man with a very unhappy marriage may have a sense of psychological well-being if his negative feelings are compensated by positive feelings about his work, his children, or his social activities. Psychiatrists have long recognized but poorly understood that one person with an unhappy marriage might decompensate while another similarly disappointed by his marriage never requires treatment. *The Structure of Psychological Well-Being* provides some intriguing pieces to one of mankind's oldest puzzles, the question of human happiness.

Le vestali della classe media [The vestals of the middle class]. By Marzio Barbaglia and Marcello Dei. Bologna: Società editrice il Mulino, 1969 Pp. 378. L. 4,000 ($6.40).

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The *contestazione* ("confrontation"), which has been the hallmark of the Italian universities for the past several years, has given rise to many slogans. "Sullo [Minister of Education, 1969] is Allah and the Police are

his Prophets." "The Professors are Servants like the Workers like the Students." "No to the Reform of the Rulers." "Paint the Altar of Society—YELLOW." A university system geared to produce the cultural elite of Italy is under attack by its children. The entire institution of education is designed to funnel away the unworthy, to insure that only the "cream" of the "cream of the crop" will enter the universities.

The Constitution of Italy (1948) provides: "The capable and meritorious, even though they be without the means, have the right to enter the highest levels of instruction. The Republic will make possible this right through scholarships, payments to families, and through other provisions which will be awarded through competitive exams." Despite the provisions of the Constitution, best estimates indicate that fewer than 6 percent of students presently enrolled in higher education come from families of workers and/or peasant backgrounds.

It has long been suspected that the major filter point of the system has been the *sculo media* (equivalent to the American junior high school), and the finest sieve in the filter has been the obligatory courses in Latin. Recent reforms have dispensed with Latin as a requirement for university admission. The present study reveals that 14 percent of the middle-school teachers would abolish Latin from the curriculum. Thus, the teachers stand exposed as the *vestals*, but not necessarily *virgin*.

Marzio Barbaglia and Marcello Dei, in one of the first major researches into the sociology of Italian education, focus on the role of the teacher in the middle school. Intensive and lengthy interviews of hundreds of teachers, principals, and parents were conducted in central Italy (1967) and provide the raw material for this critical appraisal of contemporary Italian education.

Probing into attitudes, aspirations, hopes, despairs, and the private lives of teachers, the authors reveal the frustrations of a profession which is neither fish nor fowl. Well educated, the middle-school teacher is more prestigious than the lowly instructor of the elementary grades; yet he is not entitled to the appellation *professore* as are the teachers in the *liceo*. As one interviewee phrased it, "What do we represent? To the kids we are the overseers least congenial and to the others we are persons who earn little. Our culture doesn't count. We are the servants of the servants" (p. 13).

Middle-school teachers occupy a Janus role as guardians of the gates of society. They function to eliminate from the educational system those children of "inferior" social classes who can profit little from advanced cultural experience. They are the enforcers of socialization toward passivity and subordination to the values of the dominant class. As vestals they must instruct their young charges how to obey. They are described as "the custodians of a spent wick." In a society undergoing rapid technological and social change, the teachers stand out as "defenders to the extreme of an historically superannuated patrimony" (p. 329).

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Black and White in the Consumer Financial System[1]

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Compared with white families with similar incomes, black families use fewer savings and insurance services, but more kinds of credit, have a smaller total amount of financial resources, and tend to use the less-advantageous types of financial services. Partially responsible for this is their relative lack of knowledgeability about how to rationalize their participation in the consumer financial system. The end result of the inequities of participation documented by this study is to widen the gap of well-being between black and white households.

While some distributive systems decrease relative inequalities of well-being, others tend to operate to make the poor relatively poorer. From this broad perspective, the consumer financial system presently operates to increase inequalities between blacks and whites in our society.

The "consumer financial system" means the mass-marketed complex of financial services offered to individual households by financial institutions. Almost all American households use these services; the amount, growth, and security of the financial resources of households is largely a function of their ability to gain access to such services and use them wisely. The majority of U.S. households presently utilize savings accounts, checking accounts, life insurance, health insurance, property and liability insurance, installment loans, charge accounts, and credit cards. Many also have pensions or retirement plans, home mortgages, stocks or mutual funds, and bonds. These financial services are not new; many existed in some form before the beginning of the twentieth century. The emergence of a mass-based consumer financial system, however, is a phenomenon of the last decade or two, and its impact upon relative levels of well-being in the society has just begun to be recognized.

DIMENSIONS OF INVOLVEMENT

In this investigation, my interest is in differences in the extent and nature of involvement in the consumer savings-credit system beyond inequalities of use associated with inequalities of income. Such differences are important because affiliations with financial institutions serve to mediate

[1] This paper is based upon "Involvement in the Financial System: A Mechanism of Inequality," a Ph.D. dissertation completed at Columbia University in 1969. Terence Hopkins of Columbia and Martin Albaum of the Prudential Insurance Company were most generous with their advice and critiques of the study.

between the income received during a given period of time and monetary resources available for use during that period to support the household's standard of living and strivings for social and economic mobility. That is, the various financial services represent one kind of opportunity structure which households may have differential access to and differential success in manipulating.

Three dimensions of a household's involvement in the consumer financial system were distinguished: the *level* of participation in the financial system in terms of the number of different services used; the *amounts* of financial resources available to the household as a result of these various relationships with financial institutions; and the relative advantageousness of the terms of the specific *kinds* of financial services used. The term "financial position" refers to the sum total of these three aspects of a household's involvement in the financial system.

METHOD

This study is based upon secondary analysis of survey data. Each of the surveys listed below is a representative sample of U.S. households during the 1960s. All of the surveys were conducted with complex weighted samples. This technique makes it possible to include a large enough sample of special groups, such as blacks and upper-income households, to improve the reliability of data on their behavior, while holding the total sample size within financially feasible limits. However, because the "weighted numbers" of respondents used for calculations are inflated far above the actual number of respondents, the traditional tests of significance, such as χ^2, are inapplicable. It would also be misleading to show the inflated weighted numbers of respondents in tables, and for this reason, they have been omitted. The surveys are: (1) the 1962 Survey of Consumer Finances, $N = 2,117$; (2) the 1967 Survey of Consumer Finances, $N = 3,171$; (3) the 1968 Survey of Consumer Finances, $N = 2,677$; (4) a 1966 survey by the Opinion Research Corporation for the Foundation for Commercial Banks, $N = 1,001$; and (5) a national survey sponsored by the Prudential Insurance Company, 1965, $N = 3,724$.

For each of the above surveys, a copy of the data was purchased for analysis, along with all available information on sampling, coding, and other procedures. The specific items or questions used to construct the indices and variables will be described below. Most of the results reported were replicated using data from a second sample for which similar indicators could be obtained.

LEVEL OF PARTICIPATION

Each form of asset, debt, insurance, or other financial service has its own special advantage or purpose as a means of financial management, and

represents a relationship with financial institutions into which a household may enter. The pattern or level of involvement in the consumer financial system refers to the network of relationships to financial institutions which a household has at a given point in time, in terms of the number of different types of services used. Thus, indices of the level of involvement in the consumer financial system can be constructed by counting how many different types of services a household is using.

A national sample survey conducted by the Prudential Insurance Company in 1965 included questions on the use of twelve different financial services.[2] This survey included interviews with 615 blacks who were the male or female head of the household (a number large enough to facilitate multivariate analysis), as well as with 2,889 white or "other" households. Blacks with incomes over $7,500 were sampled at a rate four times greater than would occur in a simple random sample, in order to facilitate comparisons between upper-income blacks and whites.

Overall, whites tend to use about twice as many types of financial services as blacks (see table 1). This association between race and level of participation is not attributable entirely to the higher income of whites. For all income groups except the very highest, whites use more financial services than blacks in the same income group. The data from this survey do not enable us to say with certainty whether there are differences between wealthy black and white families in the breadth of financial services they are likely to use, because there are only thirty-four affluent blacks in the sample, too few for a reliable estimate.

The test of inequality in the level of participation in the financial system by blacks and whites was replicated with data from the 1968 Survey of Consumer Finances. This survey included a number of different types of loans as well as assets. The results are shown in table 2. In

TABLE 1

MEAN NUMBER OF TYPES OF FINANCIAL SERVICES BY RACE

Family Income ($)	Blacks	Whites
Under 3,000	1.2	2.5
3,000–4,999	2.2	3.6
5,000–7,499	3.7	4.6
7,500–9,999	4.4	5.3
10,000–14,999	4.7	6.0
15,000 and over	6.2	6.2
All incomes	2.3	4.4

SOURCE.—Prudential Public Attitude Study no. 5, 1965.

[2] Group health insurance, group life insurance, association life insurance, pension, individual life insurance, individual health insurance, savings bank account, savings and loan account, checking account, government bonds, common stock, mutual funds.

TABLE 2

MEAN NUMBER OF TYPES OF ASSETS AND DEBTS, BY RACE AND FAMILY INCOME

Income ($)	Nine Assets*		Eight Kinds of Credit†	
	Black	White	Black	White
Under 5,000	0.9	1.8	0.7	0.6
5,000–7,499	1.8	2.4	2.0	1.5
7,500–9,999	2.1	3.0	2.0	1.9
10,000–14,999	2.6	3.4	2.4	2.1
15,000 and over	3.6	4.2	2.6	2.2
All incomes	1.4	2.8	1.3	1.5

SOURCE.—1968 Survey of Consumer Finances; $N = 2{,}410$ white households, 256 black households.

* Checking account, personal life insurance, bank savings account, savings and loan account, credit union savings, stock, mutual funds, bonds.

† Mortgage, installment loan for additions and repairs, auto loan, installment loan for durables, other installment loan, life insurance policy loan, bank credit card, other credit card.

every income group, whites have more types of assets than blacks. (It should be noted that, in this sample, there are only ten black families with incomes of $15,000 and over. The reverse is true of the number of types of loans, however. It is not usually advantageous to have a large number of different types of loans for small amounts. As discussed below, the larger numbers of loans reported by blacks represent a smaller total amount borrowed (except in the upper-income groups) and tend to be higher-interest loans than those used by whites.

AMOUNT OF FINANCIAL RESOURCES

As a result of continual participation in the consumer financial system, at any given time, each household has a particular amount of financial resources which it is benefiting from or which are available to it. One can quantify specific types of resources and compare them with the amounts of resources available to or used by other households ($2,000 in savings account, a $20,000 mortgage, a $500 "line of credit" on a charge card, or whatever). In assessing relative financial positions on such a service-by-service basis, it is clear that one can say that one group of households has "more," on the average, than another group of households. The total amount of financial resources available to or used by households consists of the sum of these individual amounts.

AMOUNT OF LIFE INSURANCE OWNED

An example of the type of results obtained when amounts of various specific types of financial resources of blacks and whites at various in-

come levels were compared is shown in table 3. Within any income group, black families owning personal life insurance have smaller mean amounts of coverage than insurance-owning whites at the same income level; the differences shown are not due to the fact that income has not really been "held constant." When mean amounts of insurance owned were examined within twelve narrow income groups ranging from under $1,000 to $30,000 and over, the results consistently showed higher mean amounts owned by whites. Neither can the large and consistent differences shown in table 3 be attributed to sampling error; the survey was divided into ten subsamples, making it possible to obtain estimates of sampling errors of the means, using the "jackknife" technique.[3] The probability that any of the differences found in table 3 could be attributed to sampling error is less than .01.

Having compared differences in the amount of one resource, let us look at overall differences in amounts of financial resources. The index of the total amount of financial resources constructed from data included in the 1968 Survey of Consumer Finances (2,677 interviews) indicates that the gap between blacks and whites is even larger in terms of financial position (see table 4). In every income group, the total amount of financial resources reported by whites is much larger than that reported by blacks. The differences are especially striking when amounts of assets are compared. Whites with income under $5,000 have accumulated more financial assets, on the average, than blacks with two or three times as much income. Whites have somewhat larger amounts of outstanding loans except for the upper-income groups. (This indication of the possibility that the differences between upper-income blacks and whites may be negligible is similar to that noted for numbers of types of resources.

TABLE 3

AVERAGE AMOUNT OF INDIVIDUAL LIFE INSURANCE OWNED BY INSURED HOUSEHOLDS, BY INCOME AND RACE (1965)

Family Income ($)	Blacks ($)	Whites ($)
Under 5,000	2,800	4,500
5,000–7,499	10,300	13,500
7,500–9,999	12,200	14,100
10,000 and over	14,500	27,000
Overall average	6,200	14,300

SOURCE.—Prudential Public Attitude Study no. 5, 1965.

[3] See Howard L. Jones, "The Jackknife Method," in *Proceedings . . . IBM Scientific Computing Symposium—Statistics* (n.d.), for an explanation of this method. It was used because of the small number of respondents included in many of the particular subsamples, when defined by racial category and income level.

TABLE 4

MEAN AMOUNTS OF ASSETS, DEBTS, AND TOTAL FINANCIAL RESOURCES, BY RACE AND FAMILY INCOME (1967)

INCOME ($)	ASSETS ($)		DEBTS ($)		TOTAL* FINANCIAL RESOURCES ($)	
	Black	White	Black	White	Black	White
Under 5,000.....	178	3,055	509	908	697	3,961
5,000–7,499.....	569	6,393	2,643	2,928	3,321	9,415
7,500–9,999.....	1,168	3,472	3,804	4,613	5,221	8,156
10,000–14,999...	1,066	6,975	6,404	6,389	6,005	13,582
15,000 and over..	3,925	34,084	9,633	9,357	13,700	43,501
All incomes...	518	8,280	2,021	4,181	2,362	12,538

SOURCE.—1968 Survey of Consumer Finances.

* Includes nine types of assets (amounts in checking accounts, bank savings account, savings and loan account, credit union account, certificates of deposit, stocks, bonds, mutual funds, and yearly premium payments on personal life insurance, since cash value of policies was not available) and six debts (outstanding amounts of first and second mortgage on home, remaining installment debts on additions and repairs, cars, durables, and all other installment loans; and amount borrowed on life insurance). Total assets plus debts do not add up exactly to total resources because the calculations are based on slightly different N's due to exclusion of "no answer" codes.

Possible reasons for the greater similarity in the upper-income groups will be discussed below.)

The overall distribution of financial resources resulting from inequality of resources within income groups indicates extreme differences between whites and blacks. Whereas blacks constituted 10 percent of the total 1968 sample of households, they had only 2 percent of the financial resources. When the analysis was repeated using data from the 1962 Survey of Consumer Finances, the results were identical. This would indicate that blacks have made no relative gains at all in the advantages derived from participation in the consumer financial system within those years.

Large differences also persisted when age, broad life-cycle categories, and income were controlled. That is, even when the ages, family situations and incomes of blacks and whites are similar, the black households still have smaller amounts of financial resources than their white counterparts.[4]

[4] An example of the calculations upon which these conclusions were based follows. For the 1968 Survey of Consumer Finances, the average difference in total resources between blacks and whites in the various income groups weighted by the proportion of respondents in each income group was $7,620. Age of head of household was then introduced as a simultaneous control factor, using these age groups: under 30, 30–44, 45–64, and 65 and over. The average difference in total resources between blacks and whites in the various age-income groups was $7,450, weighted for the proportion of respondents in each age-income group. A reduction of the differences from $7,620 to $7,450 was not considered to support the hypothesis that age differences between blacks and whites in various income groups significantly help to explain the overall differences found.

RELATIVE ADVANTAGEOUSNESS OF THE KINDS OF SERVICES USED

A wide range of interest rates and other terms of financial services make utilization of particular kinds of services and institutions more advantageous than alternative kinds. "Less advantageous" might be defined simply as "paying more" for the same amount of benefit and/or "getting less" for the same amount of outlay by the household. The specific details vary; let us catalog the more and less advantageous types of services to obtain a fuller idea of the varieties.

Among savings accounts, the highest rate of interest is paid on "savings certificates of deposit," issued only for fairly large round sums of money. Rates of interest paid by various kinds of savings institutions differ by locality, of course, but the next highest rate is generally available from savings and loan associations, savings banks, or credit unions; the interest rates paid by commercial banks are somewhat lower. Then there are kinds of "savings accounts" which pay very low interest or none at all. These are the "Christmas clubs" and "vacation clubs." The saver puts a regular weekly sum into the account, and at the end of the year, gets it back again. Over a period of years, differences in compound interest rates can make a great deal of difference in the amount of savings available to a household in relation to the amount which was saved. At 4 percent compounded yearly, for instance, it takes over eighteen years for money to double; at 5 percent just over fourteen years; at 6 percent it doubles every 11.5 years.

There are similar differences among other varieties of financial services. There are "special" checking accounts and regular checking accounts; relatively low-interest mortgage loans and life insurance policy loans compared with the rates charged for installment loans on durables; regular U.S. savings bonds sold in small face amounts compared with other kinds of government bonds which have higher interest rates and may be tax-free; regular life insurance versus higher-cost debit life insurance, etc.

It is hypothesized that those financial services used by blacks tend to be the less-advantageous kinds—savings forms returning poorer interest and capital gains and lower yields on the average than the forms owned by whites; loans costing higher rates of interest, and insurance costing more per dollar of protection. Evidence is fairly sparse to test this hypothesis, because of the small number of black users of specific types of services included in most of the available surveys, but it is available for types of savings accounts and life insurance. Table 5 indicates that, among households having one or more savings accounts, blacks are more likely than whites to have their savings deposited entirely in commercial banks, rather than having an account with the savings institutions which tend to pay higher rates of interest.

TABLE 5

PROPORTION OF HOUSEHOLDS HAVING A SAVINGS AND LOAN OR CREDIT UNION ACCOUNT, AMONG HOUSEHOLDS HAVING ANY SAVINGS ACCOUNT, BY RACE

Spending Unit Income ($)	Black (%)	White (%)
Under 4,000	17	24
4,000–7,499	20	43
7,500–9,999	24	56
10,000 and over	*	49
All incomes	21	43

SOURCE.—1962 Survey of Consumer Finances; $N = 2,117$.
* Sample size too small for reliable results.

More complete data are available for life insurance, and here the differences in relative advantageousness of the kinds of services used show more sharply. Calculations based on data from the 1965 Prudential survey described above show that the black household has an average of $36.00 of personal life insurance for every dollar spent, while the white household has an average of $64.00 for the same yearly premium expenditure. Why should this be? One reason is that in the past, many companies would sell only industrial or rated policies to blacks, types of insurance which are more expensive for a given amount of coverage. By 1970, this practice has been largely eliminated, but many blacks still own such policies.

Today, blacks are more likely to have debit insurance than whites. Premiums for debit insurance are collected by the agent in person on a weekly or monthly basis. Although the premium for debit insurance may be the same as for an ordinary policy of the same type and amount, it was not until recently that term riders were widely available for debit policies. Thus the white family is likely on the whole to have more personal insurance coverage per premium dollar than the black family, because it is more likely to own regular ordinary and term insurance and less likely to own industrial or debit insurance or rated policies. This explanation is supported by the data in table 6, which show that when the preferred collection method is controlled, the overall $28.00 difference between blacks and whites is reduced to $20.10 among those preferring debit insurance, and $21.40 among those preferring the mail-pay method of regular life insurance.

When income (strongly associated with the likelihood of having a "rated" occupation for which extra premium charges are made) was controlled in addition, the differences between blacks and whites were reduced still further

TABLE 6

MEAN AMOUNT OF PERSONAL LIFE INSURANCE COVERAGE OBTAINED PER DOLLAR OF ANNUAL PREMIUM PAYMENTS, BY RACE AND PREFERRED METHOD OF PAYMENT

Preferred Collection Method	Blacks ($)	Whites ($)	Total ($)	Difference* ($)
In person (debit).......	30.30	50.40	47.30	20.10
By mail (ordinary)......	50.40	71.80	70.90	21.40
Total..............	36.00	64.00	61.60	28.00

SOURCE.—1965 Prudential survey; includes only households owning personal insurance and reporting premium payments.

* Difference when standardized by white income distribution: personal collection, $19.40; mail payment, $12.10.

SUPPORTING PROCESSES

This brings us to the question of how the inequalities which have been documented came about and are maintained. Undoubtedly, the various financial institutions have engaged in discriminatory practices (perhaps inadvertently rather than purposely) which have the effect of limiting the access of blacks to financial services and of encouraging them to use the less-advantageous forms. Various pieces of information suggest that banks and other financial institutions simply do not tend to build a proportionate number of their branches in ghetto areas, whereas small loan companies charging high interest rates are in low-income and ghetto areas. Similarly, most advertising about the advantageous types of services is done in magazines and newspapers noted for a large readership among the white middle and upper classes. However, there are also patterned differences between blacks and whites on the demand side. Blacks are less knowledgeable than whites with comparable income levels about the nature of the consumer financial system and how to manipulate it to their benefit. For instance, we have seen that blacks are more likely than whites to be paying more for their life insurance, partially because they are more likely to own debit insurance. An effort by life insurance companies to force debit insurance on blacks in order to increase their profits can hardly be inferred from this. As shown in table 7, blacks on any income level are more likely than whites to *prefer* personal collection of premiums (debit insurance).

A general index of knowledgeability about the consumer financial system was constructed from data included in a 1966 national survey by the Opinion Research Corporation (N = 1,001). Eleven questions were selected for the index which probed the respondent's knowledge of the functions and characteristics of a wide variety of financial services and institutions including mutual funds, municipal bonds, commercial bank savings accounts, and life insurance. The questions consisted of state-

TABLE 7

PROPORTION OF HOUSEHOLDS PREFERRING PERSONAL COLLECTION OF LIFE INSURANCE PREMIUMS TO MAIL PAYMENT, BY RACE AND INCOME

Income ($)	Blacks (%)	Whites (%)
Under 5,000	73	46
5,000–7,499	61	39
7,500–9,999	46	32
10,000 and over	41	19
All incomes	67	37

SOURCE.—1965 Prudential National Survey.

ments with which the respondent could agree or disagree, or say that they did not know if the statement was correct. "Cheaters" could give answers which made them look more knowledgeable than they actually were by guessing, but this was discouraged by instructing the respondents that "if you don't know the correct answer, it is better to mark 'don't know' than to guess." The overall "knowledgeability score" was constructed for each respondent simply by assigning one point for each correct answer. Table 8 shows that most Americans are fairly ignorant about our financial institutions, according to this measure; the mean and the median scores both were about 3. However, blacks have an even lower level of knowledgeability about the consumer financial system than whites. There were no affluent blacks included in this sample, so we do not know if differences in financial knowledge exist in the upper-income class.

It cannot be overemphasized that these findings relate to present levels of knowledge about various kinds of financial services and institutions, not to "intelligence." Access to knowledge of this type is cur-

TABLE 8

MEAN KNOWLEDGEABILITY SCORE BY RACE AND INCOME

Income ($)	White	Black	All
Under 2,000	1.8	1.6	1.7
2,000–3,999	2.7	2.3	2.5
4,000–5,999	3.4	3.2	3.4
6,000–7,999	3.8	3.1	3.7
8,000 and over	4.7	2.9	4.6
All incomes	3.6	2.6	3.1

SOURCE.—1966 Survey by Opinion Research Corporation; $N = 1{,}001$, maximum score is 11.

rently left almost entirely to the private sphere—discussions with family or friends, reading advertisements or literature prepared by financial institutions, and "sales talks" by insurance salesmen or stock brokers. Evidently blacks are not being exposed to as much information about the consumer financial system as whites through such informal or profit-oriented sources. The only level of formal education where such information is likely to be acquired is the college economics or business course, and blacks are much less likely than whites to have gone to college and have such courses. This aspect of the inequalities discovered is amenable to direct action. Consumer education in the use of financial services could be introduced at the junior high-school level and through community programs. This would make it equally available to all, regardless of income, race, or social class.

To the extent that the differences between affluent blacks and whites may be somewhat blurred, one may refer to the same set of supply and demand forces for explanation. Affluent blacks are likely to have as much formal education, if not more, than their white counterparts, and to live a style of life more similar to affluent whites than to lower income blacks. Many live in integrated or predominantly white neighborhoods, with convenient branch offices of banks, brokers, and insurance companies. They are also likely to be exposed to the same types of advertising media as their white neighbors.

IMPLICATIONS

As Lee Rainwater (1969) points out in an issue of *Trans-Action* devoted to the American underclass, "Social scientists have failed to recognize that one of the crucial problems for understanding modern industrial society is to know what resources are necessary in order for a person to behave in ways that will allow him to become a full member of that society. What has become clear in the past decade is that the *relative* deprivation of the underclass goes to the heart of their marginality and alienation."

Without the financial services which increase and protect accumulated resources and make it possible to balance income with needs over the family life cycle, a household is not a full and equal member of the mass consumption society, nor is it obtaining equal benefits from the income it receives. The blacks in the ghetto who cannot obtain fire and casualty insurance at reasonable rates know this, and the welfare mothers who have marched for the right to have charge accounts know this. We have seen extensive evidence which consistently shows that blacks suffer relative deprivation in the accumulation and use of financial resources. Inequality of financial resources has a kind of "multiplier effect" upon

the inequalities of income which exist between blacks and whites in our society.

The consumer financial system is in a period of rapid change, with new services and new regulatory laws appearing frequently. The government, the social scientist, the financial institutions, and the public should be aware of the consumer financial system's potential as a mechanism which can be altered to increase or decrease the overall extent of inequality in the society.

REFERENCE

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Race, Maternal Authority, and Adolescent Aspiration[1]

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The present paper tests the prevalent hypotheses that the matriarchal character of black families is associated principally with father absence from the home and that a matriarchal family structure has detrimental educational consequences for black males. Within the limitations imposed by the samples, the results lead to the tentative rejection of these hypotheses. Among blacks, the authority of mothers tends to be stronger in intact than in broken families. Furthermore, maternal authority in the household and identification with a female role model do not appear to have the negative consequences on educational aspirations and school performance for black adolescent boys which have been attributed to them. Black mothers and their children have the same or higher educational aspirations than white regardless of the fact that the black adolescents tend to identify more closely with their mothers. The lower educational attainment of blacks must be sought in other factors within and outside the family which make it difficult for black adolescents to translate educational aspirations into educational achievement.

INTRODUCTION

Much has been written in recent years about the disorganization of black families, the matriarchal structure of these families as compared to white, and the negative educational consequences of these family patterns on black adolescents, more specifically, boys. According to these interpretations, the relinquishing of responsibility by fathers and the increased prominence of mothers are assumed to contribute to the poor academic achievement and low interest in educational matters of black boys and to the redirecting of the mothers' educational ambitions to their daughters (Moynihan 1965; Bronfenbrenner 1967).

The arguments linking low educational achievement of black males to matriarchy have involved two major assumptions: (1) in mother-headed

[1] Revised version of a paper presented at the 64th Annual Meeting of the American Sociological Association, San Francisco, September 1969. The data are from a larger study of adolescents (see Kandel et al. 1968) supported through the Cooperative Research Program of the Office of Education, Department of Health, Education, and Welfare (project 2139, OE-4-10-069), and by the Harvard Center for Research and Development in Educational Differences (Office of Education contract OE-5-10-239). I wish to thank the Bureau of Applied Social Research, Columbia University, for providing assistance in data processing. I am grateful to Richard Faust for technical assistance and to the editors and anonymous reviewers of the *Journal* for their critical comments.

families, absence of father from the household deprives black boys of a male role model and leads to their lower educational aspirations and achievement (Bronfenbrenner 1967); (2) in the matriarchal black family girls receive much greater encouragement from their mothers to continue their education (Moynihan 1965). Young (1964, p. 25) writes, "Historically, in the matriarchal Negro society, mothers made sure that if one of their children had a chance for higher education, the daughter was the one to pursue it."

These causal links between family structure and educational interests are derived from indirect evidence. Results from psychological studies of the personalities of white boys reared in father-absent homes are used to suggest that the high rate of mother-headed families among blacks has unfavorable educational consequences for black boys (see, e.g., Pettigrew 1964; Bronfenbrenner 1967). And, indeed, several large-scale studies based on national samples or on the census have found that both white and black males reared in broken families complete fewer years of schooling than those in intact families (Blau and Duncan 1967; Duncan 1967; Folger and Nam 1967). The educational discrimination of black mothers in favor of daughters is inferred from educational statistics indicating higher levels of completed education for black women than for black men (see, e.g., Moynihan 1965).

Neither assertion—that black families are more matriarchal than white families or that a matriarchal family structure has detrimental educational consequences—has been subjected to adequate empirical investigation. Furthermore, the concept of matriarchy as applied to black families is ambiguous and ill-defined. The term has been used alternately to refer to (1) a family structure in which the man is absent and the family unit is headed by a woman, or (2) a type of family interaction characterized by maternal dominance over other family members, whether the family is intact or broken. With rare exceptions (L. Rosen 1969), the referrent for the concept is unspecified, and often interactional characteristics are inferred from structural indicators.

Adequate testing of the hypotheses linking family structure and educational achievement requires that educational aspirations of black mothers and educational interests and achievement of black children be considered as a function of the interaction patterns of their families. The present paper is an attempt to begin to provide empirical data on this question. The following two issues are examined:

1. The nature of family interaction among comparable black and white families in intact and in mother-headed families.

2. The educational consequences, particularly educational aspirations, of these family patterns for adolescents and their parents. (Since the sample is limited to high school students, the data are relevant to educa-

tional aspirations rather than post–high school educational attainment.)

The data are taken from a larger study of adolescents (Kandel et al. 1968; Kandel and Lesser 1969*a*, 1969*b*). While the original study was not designed specifically to study black family patterns, it provides an opportunity to do so, since one of the schools sampled included black as well as white students, and data were collected about family interactions as well as on the educational interests of mothers and adolescents.

METHOD

Sample

The sample includes (*a*) adolescents from a large ($N = 1{,}683$) working-class urban comprehensive high school, with a 20 percent black student body, located in the middle eastern United States and (*b*) their mothers. Structured questionnaires were administered in the spring of 1965 to all students present in the school the day the study was conducted. In addition, self-administered, structured questionnaires were mailed to the students' mothers. Sixty-eight percent of the mothers returned their questionnaires.

In the extent of disorganization of family structure, this sample of black families is typical of urban black families in the United States. The proportion of black broken families (35 percent) is very close to that reported by the 1960 census (35.1 percent) for black children under eighteen residing in urban areas (Moynihan 1965; see also, Rodman 1969; L. Rosen 1969). The most striking differences between the black and white samples pertain to the structural characteristics of these families (table 1). The black sample contains a smaller proportion of intact families (65 percent), with both mothers and fathers residing in the household, than the white sample (82 percent). Of the white families, 13 percent are broken and are headed by the mother as compared to 29 percent of the black families. In both racial groups, 2 percent of the families are broken and are headed by the father. A very small percentage of adolescents of either race (3 percent, white; 4 percent, black) report neither parent living at home.

While separation was responsible for the majority of black mother-headed families (71 percent), death of the father accounted for 42 percent of the white broken families.

Black parents are more likely to have been born outside the state (in all likelihood in the South) and to have lived in the state for a somewhat shorter length of time (table 1). A higher proportion of blacks are Protestant.

These samples of black and white families differ least on socioeconomic characteristics. Most of the fathers are engaged in blue-collar occupa-

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF BLACK AND WHITE FAMILIES SAMPLED

DEMOGRAPHIC CHARACTERISTICS	WHITE		BLACK	
	%	N	%	N
Intact families	82	1,125	65	269*
Mother works	46	1,163	55	262*
Mother high school graduate	25	1,065	34	242
Father high school graduate	20	999	26	204
Father's occupation:				
Professional	4	1,120	4	240
Managers, officials	9	1,120	7	240
White collar	7	1,120	6	240
Skilled	42	1,120	32	240
Unskilled	38	1,120	51	240
Family income $5,000 or less	22	441	33	73
Mother born in state	65	899	48	176*
Father born in state	59	870	44	162*
In community 10 or more years	69	912	52	178
Protestant religion	60	885	81	166*

* Differences between black and white significant beyond .05 (χ^2 test). The N's vary because of different nonreply rates to different questions.

tions and represent a lower-class background. However, a greater proportion of black fathers are engaged in unskilled as opposed to skilled or semi-skilled occupations.[2] The white families command higher incomes. Black mothers are more likely to have achieved a higher educational level and are also more likely to be working (table 1).

The limitations of the sample must be stressed. Since the sample was not initially selected for the specific purpose of making a comparative study of family relations among blacks and whites, certain subgroups, for example, middle-class blacks, have very few cases. Analyses which involve introducing more than two variables reduce the number of cases, especially among broken families, to very low levels. Thus, the small size of the subsamples of broken families and the proportion of middle-class families precluded the examination of family patterns in broken families with both sex of child and social class held constant at the same time.

Measures of Family Patterns

Adolescents were asked about patterns of interaction with each of their parents, covering the following dimensions of family behavior: parental

[2] A higher proportion of black mothers and students than white did not answer the question about father's occupation. For example, the proportion of no-answers among black mothers is 33 percent as compared to 13 percent among whites. Whether these are families in which the father is actually unemployed is unknown.

authority, communication between parent and child, parental support, affective quality of the relationship, and identification.

Patterns of decision making between parent and adolescent were used as indices of type of parental authority and were measured by two five-response category items, one for the mother and one for the father.[3] The exact text of each question is:

How are most decisions made between you and your mother? (Check one)
1. My mother just tells me what to do
2. She listens to me, but she makes the final decisions herself
3. We make the decision jointly
4. I listen to her, but I make the final decision
5. I just decide what I will do myself

In the second question, father is substituted for mother. Three types of parental power have been defined:

Authoritarian: The parent regulates completely the adolescent's behavior and makes all final decisions (Alternatives 1 and 2)
Democratic: The final decision is made jointly by the child and his parent (Alternative 3)
Permissive: The adolescent has more influence in the final decision than his parents (Alternatives 4 and 5)

The other questions were of the type illustrated below:

How close is your relationship with your mother/father?
1. Extremely close
2. Quite close
3. Moderately close
4. Not particularly close
5. Not at all close

In the present study, matriarchy has been viewed from two perspectives:

1. Structural: the father is absent and the family is headed by the mother. A family was defined as intact if both parents were reported to be living in the household. No distinction was established between biological father or stepfather.

2. Interactional: the mother is the most authoritarian and significant parent in relation to the child, even when the father is present. The position of the mother in the family was assessed with respect to: (*a*) patterns of decision making between parent and adolescent; and (*b*) the affective importance of the mother relative to the father, that is, how close is the adolescent to each of his parents, how frequently does he turn to each of them when he has a problem, and how much does he identify with each of them.

[3] The items are modifications of questions developed by Elder (1962).

FINDINGS

Family Relationships in Black and White Families

a) *Parental Authority toward Adolescents*

A most striking difference between the black and white families in this sample is the greater authoritarianism of black mothers of girls in intact families (table 2). Thus, 66 percent of black girls in intact families report that most decisions between themselves and their mothers are reached unilaterally by their mothers, compared with only 40 percent of white girls. The differences for boys are much smaller. Furthermore, in contrast to white mothers, black mothers are consistently more authoritarian toward their children in intact than in broken homes. Again, the differences are larger for girls (31 percent) than for boys (15 percent). Far from occurring in mother-headed families, it is among the *intact* families that the highest frequency of black authoritarian mothers appear.

As regards fathers, no racial differences appear in the proportion who are authoritarian (table 2). However, comparison of rows 1 and 3 indicates that, with their daughters, black fathers have less authority over their children relative to their wives than those in white families.

With the exception of boys from unskilled-laborer families in intact families, the greater authoritarianism of black mothers is observed in each social class[4] (data not presented).

b) *The Intact Family and Closeness to Parents*

Further differences emerge between the family relationships of the black and white adolescents in our sample, which illustrate the ascendancy of

TABLE 2

PARENTAL AUTHORITY BY SEX, RACE, AND TYPE OF FAMILY

	Percentage with Authoritarian Parent			
	Boys		Girls	
Type of Family	White	Black	White	Black
Mother in intact families	48%	57%	40%	66%*
Total N	396	70	453	73
Mother in mother-headed families	43%	42%	42%	35%
Total N	67	26	65	34
Father in intact families	52%	57%	53%	53%
Total N	384	60	439	70

* Differences between white and black for each sex significant beyond .05 level (χ^2 test).

[4] Respondents were classified into three broad groups on the basis of father's occupation: (1) middle class (includes professionals, managers, and white-collar workers); (2) skilled and semi-skilled workers; and (3) unskilled laborers.

the mother in intact black families. Results for intact families are discussed in this section and for broken families in the following.

In addition to patterns of decision making, other patterns of family interaction were examined: the extent to which adolescents talk problems over with their parents, the extent to which they rely upon each parent for advice, the degree of closeness to each parent, the enjoyment of doing things with each parent, and the degree to which the adolescent wants to be the same kind of person as his mother or his father. The results were analyzed separately for boys and girls, holding social class constant. The detailed patterns of parent-adolescent interaction in intact white and black families are presented for boys and girls separately in Appendix tables A1 and A2. Summary results appear in table 3.

The overall conclusion is that, in these intact families, black boys are closer to their mothers than are white boys; white boys are consistently closer to their fathers. Furthermore, while white boys feel more positive toward their fathers than their mothers on many dimensions of interaction, in no case is this so for black boys.

Table 3 presents the extent to which black adolescents of each sex exceed whites in favoring mother over father on each of the five family patterns under consideration.[5] The percentage differences presented in

TABLE 3

PERCENTAGE DIFFERENCE BETWEEN BLACK AND WHITE ADOLESCENTS SHOWING EXTENT TO WHICH BLACKS EXCEED WHITES IN FAVORING MOTHER OVER FATHER ON EACH OF FIVE FAMILY PATTERNS BY SEX*

Family Patterns	Boys	Girls
Talking most problems over with parent	6	1
Depending on parents "quite a bit" or "very much"	14	2
Feeling "extremely" or "quite" close to parent	22	4
Enjoying doing many things with parent	37	9
Wanting to be like parent in most ways	16	22
Average percentage difference	19	7.6

* This table is based on Appendix tables A1 and A2. The following computations were carried out to obtain the results presented in this table: (a) Percentages in Appendix tables A1 and A2 were standardized (Rosenberg 1962), that is, weighted, according to the social class distribution of the black sample. Percentages presented under each family pattern for both races were multiplied by the following standardizing weights: middle class 0.17, skilled 0.32, unskilled 0.51. For each family pattern, by sex and parent, the three resulting percentages were added. (b) For each family pattern, the difference between percentages for mother and father was computed for each sex and race group. Positive percentage differences indicate the extent to which mother is favored over father, by each sex and race group. (c) Percentage differences of mother minus father for whites were subtracted from percentage differences for blacks. These differences of differences are presented in table 3. Positive differences indicate the extent to which blacks exceed whites in favoring mother over father.

[5] The following procedures were used to produce the results in table 3. From the data in Appendix tables A1 and A2, for each family pattern, the extent to which each racial group favored the mother over the father was computed. For example, with respect to closeness to parent among black boys, the proportion reporting feeling "extremely"

table 3 are consistently positive, indicating that blacks are more likely than whites to favor mother over father on the particular family dimension under consideration. The differences are much larger for boys than for girls.

The detailed data in Appendix tables A1 and A2 indicate that these results come about because of two complementary processes in intact families: the greater closeness of black boys to their mothers and their greater distance from their fathers. Thus, black boys are more likely than white boys to depend upon their mothers for advice, to feel extremely or quite close to them, and to enjoy doing things for them. Black boys are also somewhat more likely to take their problems to their mothers and to want to be the same kind of person as their mothers. In many instances, black boys are not only more likely to interact positively with their mothers than white boys, but they are also more likely to interact more positively with their mothers than with their fathers.

In contrast, white boys feel closer to their fathers than black boys, are more likely to enjoy doing many things with their fathers, and want to be like their fathers in most ways. Even when he is present in the household, the black father is perceived as less of a role model by the black adolescent than is the white father by his son. The proportion of white boys who would like to model their fathers is higher than the proportion who would like to model their mothers. Among blacks, the proportion who want to be like their fathers is smaller. The differences are small, but it is relevant that the percentages are higher for the mother than for the father. With regard to enjoying doing things with the parent, white boys express again greater closeness with their fathers than with their mothers. This is not so for black boys. There is, thus, in intact families, greater closeness with the father among white boys.

The racial differences in parental relations are much smaller for girls than for boys, but there remains greater involvement with the fathers among white than among black girls, more communication from the girl, and greater desire on the part of the girl to be like her father in white families.

Thus, white fathers appear to play a more significant role in relation to both boys and girls. Even when black fathers are present in the house-

or "quite" close to mother was subtracted from the parallel percentage for the father. A positive percentage difference indicates greater closeness to mother than to father. For each pattern, the percentage differences of mother minus father for whites was then subtracted from the percentage difference of mother minus father for blacks. These percentage differences were computed after standardizing the occupational distribution of the white sample on the black (Rosenberg 1962). Since the black group has a larger percentage of unskilled workers than the white group, standardization allowed control for the possible effects of unequal occupational distributions on family patterns in the two racial groups.

hold, they are perceived as less of a role model by black adolescent boys than white fathers are perceived by their sons. It is in the contrasting pattern of closeness and identification of white boys with their fathers and of black boys with their mothers that the dominant position of the mother in intact black families is clearly exhibited. While the white male is able to identify with his father and use him as a role model, the black male is more likely to turn to a female role model. It is in the intact family in which both parents are present that the dominance of the mother in black families and the lesser salience of the father becomes explicit.[6]

c) The Mother-headed Family

In broken families, racial differences appear in the relationship of both boys and girls to their mothers. The data are presented in table 4.[7] The pattern of greater closeness of black boys to the mother, previously observed in intact families, appears also in these broken families. The racial differences are more pronounced with respect to girls. Table 4 shows that black mothers have a consistently closer and more intense relationship with their daughters than white mothers on many dimensions of family life. Black daughters feel better able to discuss their problems with their mothers than do white daughters; they are more likely to depend upon their mothers for advice, to feel extremely close to them, to enjoy doing things with them, and to want to be the kinds of persons their mothers are. A comparison of the data in table 4 with those in Appendix table A2

TABLE 4

INTERACTIONS WITH MOTHER BY SEX AND RACE IN MOTHER-HEADED FAMILIES

Percentage of Adolescents Who.	Boys		Girls	
	White	Black	White	Black
Talk most problems over with parent	36%	23%	42%	62%
Total N	67	26	64	32
Depend on parents "quite a bit" or "very much"	56%	55%	56%	70%
Total N	54	20	50	23
Feel "extremely" or "quite" close to parent	57%	78%	57%	74%
Total N	67	23	61	31
Enjoy doing many things with parent	29%	38%	41%	58%
Total N	66	26	64	33
Want to be like parent in most ways	30%	44%	48%	61%
Total N	67	23	63	31

[6] A similar interpretation of the role of the father and mother in the socialization of black children has been made by David Gottlieb (1969) in a study of educational aspirations of poor white and black adolescents.

[7] Although the cells have few cases and the small N's prevented statistical differences from appearing, the percentage differences seem worth mentioning.

suggests also that the absence of the father from the household brings about greater distance between mother and daughter in white families than in black. As a result of this differential impact of father absence, black girls in broken families are closer to their mothers than the whites.

Educational Consequences of Family Structure

As noted earlier, the matriarchal character of the black family is thought to be a major deterrent to the educational interests and intellectual achievement of black children. But what are, in fact, the educational consequences of different types of family patterns and, in particular, maternal authority for black mothers and their children? Does a family constellation in which the mother plays a dominant role have the negative educational consequences which have been attributed to it? The conclusions are tentative, but the findings do not indicate that such a family structure per se has necessarily negative educational consequences[8] for black adolescents, at least at the high school level.

The possible influence of family structure on maternal aspirations, on the one hand, and on the educational behavior of adolescents, on the other, was examined.

a) Maternal Educational Aspirations and Family Structure

The data indicate that black mothers have very high educational aspirations for their children, irrespective of type of family. The evidence is twofold and consists of (1) the levels of maternal aspirations in black as compared to white families, and (2) the lack of relationship between aspirations and family structure.

1. *Level of educational aspirations of black and white mothers.*—Black mothers have consistently higher aspirations for their children, both sons and daughters, than white mothers (see table 5).[9] Since maternal educational pressures are closely related to maternal aspirations (Kandel and Lesser 1969*a*), black sons are not subject to less maternal pressure to continue their education than are white sons. The proportion of mothers who report that they have strongly encouraged their sons to go on to college is higher among blacks (60 percent) than among whites (48 percent). (It is even higher for girls: 59 percent among blacks vs. 30 percent among whites.) At the same time, the data do reflect the greater emphasis which

[8] The consequences examined in this paper are not educational achievement as represented by higher education actually achieved following graduation from high school, but aspirations and school performances while in high school.

[9] These results confirm the findings of other investigators (Bloom, Whiteman, and Deutsch 1965; B. C. Rosen 1959). Elder (1970) also reports that, with social class controlled, black adolescents are more likely than white adolescents to report that their parents want them to attend college.

TABLE 5

MOTHERS' EDUCATIONAL ASPIRATIONS, BY RACE, SEX, AND TYPE OF FAMILY

Type of Family	Percentage of Mothers with College Aspirations	
	White	Black
Intact:		
Boys	78%	90%
N	276	49
Girls	50%	86%*
N	290	52
Mother-headed:		
Boys	74%	77%
N	46	22
Girls	60%	94%*
N	40	31

* Differences between black and white significant beyond .05 level of probability.

black mothers place on an education for their daughters as compared to whites. Black mothers have educational aspirations for their daughters which are as high or even higher than those for their sons. This is in contrast to white families in which maternal aspirations are consistently lower for girls than for boys. For example, in intact families, 50 percent of white mothers aspire for their daughters to go on to college as compared with 78 percent for their sons; among the black families, 90 percent of boys' mothers and 86 percent of girls' mothers aspire to college for their children.

Thus, while there is evidence that black mothers have high educational aspirations for their daughters, this is not to the detriment of the sons as can be seen from a comparison with the aspirations of white mothers for their children.

When social class is introduced as a control variable, the number of cases in certain cells becomes very small. Yet, the data suggest that the greater aspirations of black mothers as compared to white exist at all social class levels with the one exception of middle-class boys where aspirations for boys are the same among blacks and whites. Aspirations do not decline with decreasing socioeconomic status (table 6). They are not even consistently lower among mothers who did not answer the question about their husbands' occupations, some of whom can be assumed to belong to households where the husband is unemployed[10] and where financial resources are extremely scarce.

[10] This assumption is based upon the observation that the no-response rate to the occupation question was much higher than to the question immediately preceding or following it.

TABLE 6

MOTHERS' EDUCATIONAL ASPIRATIONS BY RACE, SEX, AND SOCIAL CLASS*

	PERCENTAGE OF MOTHERS WITH COLLEGE ASPIRATIONS			
RACE AND SEX	Middle	Skilled	Unskilled	No Answer
Boys:				
White	88%	76%	74%	74%
Total N	61	96	117	46
Black	88%	82%	96%	79%
Total N	8	11	24	28
Girls:				
White	52%	55%	46%	56%
Total N	54	130	110	34
Black	100%	81%	90%	88%
Total N	9	16	31	6

* Based on mothers' report of educational aspirations and social class.

Since these maternal aspirations are specified by the mothers themselves and are not perceptions of aspirations reported by the adolescents, these data provide strong supporting evidence for the prevalent assumption that black mothers stress educational goals for their daughters, but the data do not indicate that this is a detriment to their sons, unless the sons react negatively to the relative discrimination.

2. *Maternal aspirations and family structure.*—Black mothers' emphasis upon the educational achievement of daughters has been assumed to derive from the disorganization of black families and a resulting matriarchal structure. The relationship between matriarchy and maternal aspirations was investigated in two ways: by relating maternal aspirations (*a*) to intactness of the family and (*b*) to maternal patterns of authority toward their children.

As shown by table 5, aspirations of black mothers for daughters are similar whether the family is intact or broken; aspirations for sons are higher in intact than in broken families. However, in broken families, black mothers' aspirations are higher for daughters: 94 percent aspire to college for their daughters compared with 77 percent for their sons. This is the only group of mothers that holds lower aspirations for boys. While white mothers in broken homes have higher aspirations for their daughters than those in intact families, their aspirations are nevertheless higher for their sons.

Contrary to the hypothesis put forward in the literature on black families, maternal educational aspirations are not related to maternal authority in the household, an interactional indicator of maternal dominance. Authoritarian mothers, whether black or white, do not hold the

highest educational aspirations for their daughters (see table 7). Authoritarian and democratic mothers have similar aspirations for their children.[11]

While the data confirm that in mother-headed black families mothers are more likely to stress a higher education for their daughters than for their sons, the data do not support the hypothesis that maternal authority per se in the black family is associated with lowered maternal aspirations for sons as compared to whites.

b) Family Processes and Adolescents' Educational Behavior

Besides maternal aspirations, the educational consequences of family structure were also examined in relation to the adolescent himself. We investigated whether black boys who come from broken families, those who come from families with authoritarian mothers, or those who have closer interactions with their mothers than with their fathers have lower educational aspirations and lower school performances than those who have an adequate male role model. Recent evidence strengthens the particular argument that authoritarian families negatively affect the educational aspirations of adolescents. Thus, Elder (1963) and Rehberg et al. (1970)—using a measure of parental authority similar to the one used in this study—have shown that adolescents with authoritarian parents have lower educational aspirations than adolescents with democratic parents who provide the child with an opportunity to participate in the making of decisions which affect him. The extent to which this relationship would

TABLE 7

MOTHERS' EDUCATIONAL ASPIRATIONS BY MATERNAL AUTHORITY, RACE, AND SEX[a]

	PERCENTAGE OF MOTHERS WITH COLLEGE ASPIRATIONS					
	White			Black		
SEX	Authoritarian	Democratic	Permissive	Authoritarian	Democratic	Permissive
Boys	75%	82%	69%*	89%	87%	83%
Total N	130	136	52	37	16	12
Girls	49%	55%	53%	88%	93%	97%
Total N	154	138	30	43	28	8

[a] Based on mothers' report of educational aspirations and maternal authority.
* Differences among authority patterns significant at .05 level (χ^2 test).

[11] The relationship between maternal authority and aspirations is smaller among mothers than among adolescents (see table 9). To the extent that there is *any* relationship at all, the trends for mothers are in the direction of those found for adolescents: highest educational aspirations appear in families with democratic mothers (see also Elder 1963; Rehberg, Sinclair, and Schafer 1970).

also apply to black adolescents, and more specifically black boys, is unknown.

The following hypotheses were tested:

> Black boys in intact families have higher educational aspirations and higher academic performance than boys in mother-headed families.
>
> Black girls in mother-headed families have higher aspirations and higher school performance than black girls in intact families.
>
> Adolescents in families with authoritarian mothers have lower aspirations than adolescents in democratic families.
>
> Black boys in intact families, who have closer relationships with their mothers than with their fathers, have lower educational aspirations and lower academic achievement than boys who experience a strong male role model.

The following indicators of educational interests and performances were considered:

> Educational aspirations, as reported by the adolescent
> Self-reported grades (quartile standing)
> Number of hours spent studying (as reported by the adolescent)
> IQ score (quartile standing from school records)
> Most recent English grades (from school records)
> Class rank in senior year (from school records)

The results suggest a lack of relationship between indices of matriarchy and the academic behavior of adolescents, whether black or white.

Before examining the relation of adolescents' aspirations to family structure, it should be noted that the racial differences in aspirations among adolescents parallel those observed among mothers. Educational aspirations are higher among black than white boys from intact families, and strikingly higher among all black girls (see table 8). These findings are consistent with those of other investigators. Black adolescents are consistently found to have aspirations which are as high or higher than those of whites (Antonovosky and Lerner 1959; Coleman et al. 1966; Gottlieb 1964, 1969; B. C. Rosen 1959; Sexton 1963; Stephenson 1957; Wilson 1967).

Intactness of the family bears some relationship to the level of aspirations of black adolescents but no relationship to academic performance. As shown by table 8, there is a slightly higher tendency for black boys and girls from intact families[12] to aspire to college. No difference appears in the aspirations of white male adolescents; white girls have slightly higher aspirations in broken families, paralleling the trend observed among mothers. However, the sex and race differences in levels of aspirations are much greater than those introduced by intactness of the family.

[12] On the basis of a much larger sample, Coleman et al. (1966) and Wilson (1967) report no relationship between intactness of family and levels of aspirations.

TABLE 8

ADOLESCENTS' EDUCATIONAL PLANS AND ACADEMIC PERFORMANCE BY SEX, RACE, AND TYPE OF FAMILY

PERCENTAGE OF ADOLESCENTS:	BOYS				GIRLS			
	White		Black		White		Black	
	In-tact	Bro-ken	In-tact	Bro-ken	In-tact	Bro-ken	In-tact	Bro-ken
Who plan to go to college.........	64%	63%	74%	65%	29%	37%	80%	69%
Total *N*......	291	49	57	17	327	46	51	29
Who say they are in the top quarter of their class......	14%	19%	16%	18%	14%	11%	12%	10%
Total *N*....	437	75	90	33	475	70	81	42
Who actually rank in top quarter of their class (senior year).........	19%	18%	15%	20%	36%	17%	14%	8%
Total *N*...	136	28	33	10	146	18	22	12
With IQ scores in top quartile of school........	32%	46%	7%	9%	30%	29%	10%	9%
Total *N*....	439	76	94	33	481	70	82	44

Furthermore, among both blacks and whites, intactness of family is unrelated to level of school performance.[13]

In line with the results of other investigators (Elder 1963; Rehberg et al. 1970), the data suggest that adolescents' educational aspirations are highest in democratic families in which the mother shares her power with the adolescent in the decision-making process (see table 9). It must be stressed that the differences in certain groups are small and are rarely significant. Interestingly enough, the differences between authoritarian and democratic patterns are smallest among girls in black families. However, the most notable finding in table 9 is that, with the exception of the small group of black boys in permissive families, black adolescents have higher aspirations than whites, even when patterns of maternal authority are controlled for. Race is a much more important determinant of aspiration levels than maternal authority.

Levels of educational interests and school achievement are unrelated to patterns of parental interaction indicative of maternal dominance relative to the father. In order to identify more precisely dominance of the mother relative to the father in the adolescent's life, the data on

[13] Other investigators have also failed to find a difference in school performance of adolescents from intact and broken families (Burchinal 1964; Nye 1957; Parry and Pfuhl 1963). (Note that table 8 presents data on only three indicators of school performance.)

TABLE 9

ADOLESCENTS' EDUCATIONAL PLANS BY MATERNAL AUTHORITY, RACE, AND SEX

	Percentage of Adolescents with College Plans					
	White			Black		
Sex	Authoritarian	Democratic	Permissive	Authoritarian	Democratic	Permissive
Boys	62%	68%	65%	71%	88%	60%
Total N	148	109	48	34	16	10
Girls	22%	40%	24%*	77%	81%	71%
Total N	140	154	55	39	21	7

* Differences among authority patterns significant at .05 (χ^2 test).

interaction with the mother were combined with those for the father in intact families. The adolescent's joint relationship to his parents was examined in three areas of interaction: decision making, closeness, and wanting to be the same kind of person as the parent. Each family variable was first divided into two categories, representing low or high interaction with the parent on that variable. Maternal and paternal patterns were then combined to give a fourfold classification of joint parental relationship. For example, the joint maternal and paternal relationship with respect to closeness includes: (1) adolescents who are very close to both parents; (2) adolescents very close to their fathers, not close to their mothers; (3) adolescents very close to their mothers, not close to their fathers; (4) adolescents not close to either parent. The assumption is that families of boys in which the mother is more authoritarian than the father, in which the adolescent is closer to his mother than to his father, and wants to be like his mother rather than his father are matriarchal and do not provide strong male role models.

Adolescents' levels of educational aspiration, school performance, or interests in studies are not higher among black boys who are closer to their fathers than to their mothers (table 10)[14] or who identify with their fathers more than with their mothers (data not presented). These results require that we subject to careful empirical scrutiny many implicit assumptions about the negative role of maternal dominance on the educational behavior of black adolescents.[15]

However, the limitations of the data and the tentative nature of the

[14] This lack of relationship could perhaps be explained by the fact that underachieving adolescents have already dropped out of school by the time they should have been in high school and therefore do not appear in the sample.

[15] Similarly, L. Rosen (1969) was unable to confirm many of the hypotheses linking matriarchy to delinquency among black males.

TABLE 10

ADOLESCENTS' EDUCATIONAL PLANS BY DEGREE OF CLOSENESS TO PARENTS, SEX, AND RACE

	CLOSENESS TO PARENTS*			
PERCENTAGE OF ADOLESCENTS WITH COLLEGE PLANS	Both Parents High	High Father, Low Mother	Low Father, High Mother	Both Parents Low
Boys:				
White	65%	65%	73%	61%
Total *N*	126	26	33	64
Black	86%	2%	77%	83%
Total *N*	14	2	13	6
Girls:				
White	39%	32%	32%	28%
Total *N*	126	19	69	69
Black	78%	...	91%	82%
Total *N*	19	1	11	11

* Based on a cross-tabulation of the following two questions:
How close is your relationship with your mother/father?
1. extremely close
2. quite close
3. moderately close
4. not particularly close
5. not at all close

High closeness = 1–2; low closeness = 3–5.

findings must again be emphasized. This paper deals with educational aspirations and not actual educational achievement. While educational aspirations have been found to be highly correlated with post–high school educational attainment (e.g., see the follow-up study by Sewell and Shah 1968) and aspirations have frequently been used as indicators of achievement (see Rehberg et al. 1970 and the studies cited therein), the relative levels of aspirations observed in our samples of adolescents do not correspond to the actual educational achievements of blacks and whites. Black adolescents do not generally proceed as far in their schooling as white adolescents (Blau and Duncan 1967; Coleman et al. 1966; Duncan 1967; Folger and Nam 1967). Furthermore, the evidence from national studies is that, for both black and white, a broken family background represents a handicap with respect to educational achievement Blau and Duncan 1967).

At their present levels, the aspirations of black parents and adolescents are clearly unrealistic and, as suggested by Katz (1967), may reflect an element of wishful thinking.[16] Indeed, we find that aspirations of black

[16] Dohrenwend and Dohrenwend (1969) have recently proposed a psychological interpretation to account for the unrealistic levels of aspirations among black youths. Extrapolating from studies on achievement motivation (e.g., Atkinson 1966), they suggest that the extremely high level of aspirations of blacks represents defensive behavior in the existence of low need achievement and great fear of failure.

students are less likely than those of whites to be formulated in relation to levels of ability. The association between IQ and aspirations is lower among blacks (.086 for boys, .122 for girls as measured by $\tau\beta$) than among whites (.270 for boys, .245 for girls) (see also Wilson 1967). Among the adolescents planning to go to college, fewer among blacks (23 percent) than among whites (49 percent) were enrolled in a college preparatory program. Similarly, Coleman et al. (1966) report that blacks, more of whom aspired to college, less frequently than whites had taken any concrete steps to investigate particular colleges: a lower proportion had communicated with a college or had read a college catalog. Katz (1967) proposes that black adolescents have internalized high educational values and goals but not the behavioral mechanisms requisite for attaining them, and as a result "the relationship between verbal expressions of the standards and actual performance will tend to be an inverse one" (Katz 1967, p. 175).

Black parents have the same high educational goals held by their children. The factors which contribute to the lower educational attainment of blacks are those which make it impossible for the black adolescent to translate his educational aspirations into actual educational attainment. These factors may be found in the family. Black mothers with high aspirations may not know how to translate them into behavior that promotes achievement.

However, the relevant factors may be found outside the family, in the limited opportunities and the obvious inequities created by society at large and particularly the schools. The recent dramatic increase in the enrollment of blacks in New York colleges following the institution of an open enrollment policy is testimony to the ability of blacks to take the first step toward translating their educational goals into behavior once barriers created by society against their advancement are removed. Whatever its origins, the large discrepancy between aspirations and achievement is a source of frustration and demoralization for black adolescents (Katz 1967; Elder 1970).

CONCLUSION

Within the limitations imposed by the small size of our sample, several conclusions are reached.

While mothers appear to exercise greater authority toward their girls in black than in white families, it is among the intact, rather than the broken, families that these racial differences appear most strongly. Maternal dominance in intact families expresses itself in various ways: black mothers are more likely than white mothers to make decisions unilaterally for their daughters; black boys are closer to their mothers and more

distant from their fathers than white boys. In broken families, black girls are much closer to their mothers than are white girls. Black mothers and adolescents have higher educational aspirations than whites. These racial differences persist regardless of intactness of family, type of maternal authority, or maternal ascendency in intact families.

Bronfenbrenner (1967), in an evaluation of the sources of educational inadequacy experienced by Negroes, especially Negro boys, stresses the impact of paternal absence in Negro families: these youngsters from fatherless homes are raised in a feminizing environment, lack a proper role model, and experience a confused sex identity. The data presented in this paper suggest that the "matriarchal" and "feminizing" character of the black child's familial environment may be even more extensive than suspected, since greater maternal authority and identification with a female role model are characteristic even of intact black families where the father is present. There appear to be pervasive cultural patterns which characterize black households irrespective of structural integrity or socioeconomic level of the family.

As far as aspirations are concerned, these family patterns do not have the negative consequences on aspirations which have been attributed to them. The black family has successfully transmitted high educational aspirations to the adolescents. Yet, these high aspirations are not reflected in the levels of education actually attained by blacks. We have not excluded the possibility that the family, in addition to institutions outside the family, plays a role in the limited ability of black adolescents to translate their high educational aspirations into actual educational achievement.

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APPENDIX TABLE A1

PATTERNS OF BOYS' INTERACTIONS WITH PARENTS BY RACE AND SOCIAL CLASS IN INTACT FAMILIES

Percentage of Adolescents Who:	With Mother				With Father			
	White		Black		White		Black	
	%	N	%	N	%	N	%	N
Talk most problems over with parent:								
Middle	33	75	46	11	32	74	33	9
Skilled	36	137	21	14	35	133	25	12
Unskilled	35	146	44	27	43	144	42	26
Depend on parent "quite a bit" or "very much":								
Middle	45	58	71	7	49	57	50	6
Skilled	44	69	54	11	40	98	60	10
Unskilled	42	110	60	20	44	110	37	19
Feel "extremely" or "quite" close to parent:								
Middle	65	74	80	10	57	71	22	9*
Skilled	68	136	64	14	61	128	54	12
Unskilled	63	145	74	27	65	144	52	25
Enjoy doing many things with parent:								
Middle	35	75	36	11	50	74	...	9*
Skilled	27	137	50	14	43	133	25	12
Unskilled	27	143	52	27*	46	145	42	26
Want to be like parent in most ways:								
Middle	37	75	46	11	45	71	33	9
Skilled	36	135	29	14	47	129	33	12
Unskilled	32	145	41	27	47	144	36	25

* Difference between white and black significant beyond .05 level (χ^2 test).

APPENDIX TABLE A2

PATTERNS OF GIRLS' INTERACTIONS WITH PARENTS BY RACE AND SOCIAL CLASS IN INTACT FAMILIES

PERCENTAGE OF ADOLESCENTS WHO:	WITH MOTHER				WITH FATHER			
	White		Black		White		Black	
	%	N	%	N	%	N	%	N
Talk most problems over with parent:								
Middle	56	73	50	8	16	69	0	8
Skilled	53	189	41	22	10	179	14	21
Unskilled	53	150	50	34	17	146	6	34
Depend on parent "quite a bit" or "very much":								
Middle	69	60	66	6	51	61	50	6
Skilled	72	152	62	13	32	151	30	13
Unskilled	69	117	78	23	44	118	43	23
Feel "extremely" or "quite" close to parent:								
Middle	72	72	63	8	58	70	28	7
Skilled	71	184	50	22*	46	176	30	20*
Unskilled	69	149	73	34	50	140	50	34
Enjoy doing many things with parent:								
Middle	49	73	50	8	28	67	12	8
Skilled	50	188	32	22	26	179	18	22
Unskilled	47	150	62	34	27	146	24	34
Want to be like parent in most ways:								
Middle	57	72	62	8	40	70	29	7
Skilled	60	188	59	22	30	175	25	20
Unskilled	60	150	65	34	31	141	15	34

* Difference between white and black significant beyond .05 level (χ^2 test).

Ethnic Relations in Israel[1]

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Israel's ethnic relations can be best described in terms of two major relationships: (1) between European and non-European Jews; (2) between Jews and non-Jews (predominantly Arabs). Data about these relationships is drawn from several studies carried out in Israel during the period 1966–68. The main conclusions of the analysis are: (1) Relations between European and non-European Jews are asymmetrical; European Jews serve as a positive reference group for non-Europeans. While there is considerable prejudice against non-European Jews, the attitude of non-European Jews toward Europeans is usually favorable. (2) Ethnic hostilities between Jewish communities are tempered by a sense of interdependence in the face of the conflict between Israel and its neighbors and by the high rate of economic and social mobility in Israel. (3) The outlook for full integration among Jewish ethnic groups seems favorable. An overwhelming majority is both expecting and welcoming such integration. (4) Jewish-Arab relations are developing in an unfavorable direction. Both the external conflict and internal processes seem to intensify mutual hostility and mistrust. (5) Relations among Jews and between Jews and Arabs are closely interconnected. For Jews of Middle Eastern origin, the Arabs are a negative reference group. The oriental Jews' hostility and prejudice against Arabs (which were found to be more intensive that that of European Jews) seem to be an expression of their desire to be fully accepted in Israeli society.

INTRODUCTION

Students of Israeli society are sometimes so fascinated by unique characteristics that they fail to relate their studies to similar situations and processes elsewhere. Through this failure, two vital benefits are lost: social problem solving in Israel is not stimulated by ideas from abroad, and Israel is not used as a social laboratory in which sociological knowledge (deriving predominantly from studies made in America) can be reconsidered.

In the case of Israel, ethnic relations, like almost any social topic, must be discussed in relation to the overwhelming problem confronting Israel: the all-involving conflict with the surrounding Arab world. No simple cause-effect relationship can be postulated between the external struggle

[1] The author would like to thank S. N. Eisenstadt and S. Herman of the Hebrew University for their guidance and encouragement. The loyal and resourceful assistance of Nira Davis is gratefully acknowledged. Limitations of space prevent me from mentioning individually my many young Jewish and Arab colleagues who worked under extremely tense and difficult conditions to make this study possible.

and internal structure. Clearly, Israeli society in general and ethnic group relations in particular are deeply influenced by the Arab-Israeli conflict. On the other hand, there is obviously a feedback; social features which developed during two decades of external struggle have by now become actively engaged in this struggle. The characteristics of the opponents and the nature of their conflict have become parts of one undividable system.

On a more specific level, we should note that Israel's ethnic relations can be best described and analyzed in terms of two major relationships: (1) between European and non-European Jews (the latter will be referred to below as "Orientals"); (2) between Jewish and non-Jewish (predominantly Arab) citizens. This is admittedly an oversimplification. Both the European and the non-European Jewish groups are divided into many subgroups which differ in language, level of education, income, life-style, and many other characteristics. The non-Jewish population is also ethnically subdivided. (One non-Jewish group [the Druzes] are well known for assuming a position favoring the Jews and opposing the Arabs.)

Although the division of the Israeli population into three groups (European Jews, Oriental Jews, and Arabs) does not correspond to demographic reality, this simplistic division does organize meaningfully the complex ethnic attitudes and relationships. (Tables 1 and 2 give the actual distribution of Jews and Arabs.)

Popular images of ethnic differentiation always embody crude categorization. In this way the three "blocs" emerged in the minds of most Israelis. In private conversation, newspaper articles, and even in the parliament, "Europeans," "Orientals," and "Arabs" are referred to as the three main components of Israeli society.

RELATIONS BETWEEN EUROPEANS AND ORIENTAL JEWS

The most remarkable feature of this relationship is its tranquility. Apart from one isolated incident in which shops were looted and a few passersby attacked, there were no ethnic riots during Israel's two-decade history. All attempts to establish ethnic political parties failed. While one to three representatives of such parties occupied seats in the first, second, and third Knesset (Israeli parliament), in the last four elections no ethnic party was even in existence. (It should be noted that Israel has a multiparty system, in which about ten to fifteen parties, most of them very small, compete for the 120 seats in the Knesset.)

This tranquility is astonishing if one considers that almost all leadership positions in the country are occupied by Europeans, that European per capita income is about twice that of Orientals, and that the European

TABLE 1

ETHNIC DISTRIBUTION OF THE JEWISH POPULATION IN ISRAEL*

Country of Descent	Percentage
Jewish citizens of European descent:	
USSR	13
Poland	17
Rumania	11
Bulgaria, Greece	4
Central Europe (Germany, Austria, Czechoslovakia)	6
Western Europe (Britain, France, Benelux, Spain, Italy)	2
Other European countries	1
Total	54
Jewish citizens of American descent:	
USA, Canada	0.5
South and Central America	0.5
Total	1.0
Jewish citizens of Asian descent:	
Iraq	11
Yemen, Aden	6
Turkey	4
Iran	2.5
Other Asian countries	2.5
Total	26.0
Jewish citizens of African descent:	
Morocco	9
Algeria, Tunisia	3
Libya	2
Egypt	2
Other African countries	0.5
Total	16.5

SOURCE.—Statistical Abstract of Israel, 1968, p. 43.
* Total Jewish population: 2,500,000.

TABLE 2

NON-JEWISH GROUPS IN ISRAEL IN 1967

Group	Population
Muslims	287,000
Christians	71,000
Druze and others	33,000
Total	391,000*

SOURCE.—Statistical Abstract of Israel, 1968, p. 45.
* Includes the population of East Jerusalem, about 66,000.

cultural tradition and style of life dominate the society. A careful analysis will show that the relation between these two segments of the Jewish community in Israel is the product of a rather complicated balance of forces, some disintegrative, driving the ethnic groups apart, others integrative. The outcome of these countervailing forces is not a simple positive relationship but rather a sensitive equilibrium in which a sense of mutual responsibility and common loyalty coexist with covert hostility and underlying tensions.

Factors Impeding the Integration of Jewish Ethnic Groups

Dissimilarity.—Compared with other countries, the variation between Jewish ethnic groups in Israel seems to be extremely great: although all Jews have the same religion, they differ in all other aspects: language, dress, and they relate differently to each other and have a variety of socialization patterns and family structures. An extreme example is that there are some Jewish mountain tribes that emigrated from inland Morocco and Tunisia. The term "primitive society" would not be an exaggeration. Even the men were illiterate. They lived in caves in Morocco; some of them dug new caves for themselves in Israel, using their houses for storage space. Their religious beliefs and practices include many archaic superstitions. By contrast, American and western European Jews belong to the most advanced middle class of their Western societies. This is admittedly an extreme example, for most Orientals are much closer to a modern style of living, and many Europeans left environments only in the beginning stages of modernization, such as the rural Ukraine.

Considerable overlap between ethnic background and economic and demographic characteristics.—In Israel, issues which would be defined in ethnically homogeneous societies as class differences have implicit ethnic elements. The majority of Europeans emigrated prior to 1949 (the last large group of European immigrants were survivors of the holocaust who came immediately after the state was established), while the overwhelming majority of Orientals arrived after 1949. Those who came first had the opportunity to obtain most of the prestigious positions as well as to occupy the more desirable housing. New-founded towns and villages in the south or far north are predominantly Oriental, while the best neighborhoods in cities such as Tel Aviv and Haifa are predominantly European. The advancement to leadership positions is quite selective. In political positions (mayors of towns, local labor union leaders) in which leaders are directly accountable to their constituents, Orientals are found in increasing proportions. They are less prominent in national politics, although it has become customary to reserve two seats in the government and about thirty seats in the Knesset for Oriental representatives (who

are never officially identified as such.) There is not one Oriental in the high ranks of the army, and very few have influential academic positions.

Emigration to Israel is perceived as emancipation from minority status.—Jews are known to be extremely sensitive to any indication of prejudice or discrimination. One of the main incentives for emigration to Israel is the attempt to rid oneself of an inferior status and to become part of a dominant majority. For the Oriental Jew in Israel, immigration has only created new frustration because they have not become a part of the dominant group in Israel's ethnic stratification. "In Morocco, we were considered Jews, and here we are called Moroccans," is a frequently heard complaint.

The cultural resemblance of Orientals and Arabs.—The majority of non-European Jews in Israel originated from Arabic-speaking, predominantly Moslem societies. They were naturally influenced by Arab and Muslim culture, and they incorporated many of its elements into their own social and individual behavior. There exists in Israel a certain contempt and hostility toward everything which symbolizes the Arab world. Arab music is never broadcast on the radio; Arab art is not displayed, and most people would feel uneasy if they spoke Arabic in public places. While no one identifies Oriental Jews with the external Arab enemy, it is important that much of the cultural heritage and life style of Oriental Jews is explicitly rejected, not only by Europeans, but also by the central institutions of Israeli society.[2]

Factors Promoting the Integration of Jewish Ethnic Groups

The cultural and ideological factor.—In *American Dilemma,* Myrdal (1962) points out that most Americans subscribe to a full integration of Negroes (and other ethnic groups) into the mainstream of society. One could say that Israel is even more committed ideologically to absolute and egalitarian integration of all Jewish subgroups.

The dominant political ideologies in Israel are socialism in its several versions and liberalism. There is no conservative party in Israel, and no discriminatory ideology toward any Jew has ever been promulgated. The horrible confrontation between the Jewish people and the racist Nazi regime made reference to "natural superiority" or any official announcement of prejudice distasteful to most Israelis.[3]

In addition, the central role which Jewish religious symbols play in Israeli culture and education has a unifying effect. Obviously the mean-

[2] Egyptian films are a noteworthy exception.

[3] K. Katzenelson (1964) is an exception to this rule. Here the author tried to develop an ideology of European superiority. His book, however, was violently denounced by all segments of the public. I cannot recall one favorable response to the book.

ings which Israelis of different backgrounds attach to mythological events like the Exodus from Egypt or to rituals like fasting on Yom Kippur are quite different, but whatever the nature of observance, the same symbols are meaningful to everyone.

Zionist ideology adds another dimension. Zionism sets forth a special interpretation of Jewish history in which Jews are considered to owe allegiance to each other rather than to the nations in which they live as a minority.[4] Israel addressed itself directly to integration, proclaiming it as one of the most important assignments on the national agenda. Intermarriage between different ethnic groups is not only accepted but highly valued. Teachers, physicians, and social workers are encouraged to settle among people they serve, and signs of prejudice are denounced not merely as unethical but as unpatriotic.

Socioeconomic factors.—While the overlap between socioeconomic status and ethnic background aggravates ethnic relations, dynamic developments in the Israeli economy and stratification system contribute to ethnic integration. It should be kept in mind that Israel's short history is a period of rapid expansion. The Jewish sector in Palestine increased four times in population, but other resources, for example, land, capital, expertise, and power expanded even more. The absorption of immigrants was and still is considered to involve some sacrifice by the absorbing society, as if the inhabitants were sharing their homeland with the newcomers. However, economic surveys show that, indeed, in the fifties, the old-timers actually increased their standard of living more than did the immigrants. The gap diminished in the sixties. In any case, established Israelis of predominately European origin did not lose economically in sharing with the immigrants but actually prospered in the process; due to the enormous increase in resources, the economics of ethnic relations in Israel was not a zero sum game.[5]

[4] S. N. Herman (1970) has systematically investigated the degree to which Jewish and Zionist values have been successfully taught. Herman's empirical findings indicate that a definite majority of Israeli youth has a strong and positive Jewish identity and a sense of responsibility and attachment toward other Jews all over the world. This evidence contradicts the conclusions influenced by the insightful although unsystematic observations of scholars such as Spiro (1967) and Friedman (1967).

[5] G. Hanoch (1961) and R. Klinov-Malul (1969), two Israeli economists, both established and interpreted these facts through an interesting exchange. Hanoch reported that the income gap between immigrants and old-timers was increasing over time and explained this tendency by the growing income differentiation between manual workers and professionals. He predicted that, if no far-reaching measures were taken, social and economic gaps would increase and find political expression. Klinov-Malul cited later findings which indicated that after 1958 income gaps were gradually decreasing. Responding to this challenge, Hanoch (1969) offered a new explanation: the growing gap in incomes should be understood as a result of the increase in the untrained labor force. (This increase is not exactly synonymous with immigration, as a year or two usually elapses between the arrival of immigrants and their full participation in the

The gain of Jews of European origin from the influx of Oriental Jews was not only economic. As the newcomers took over the lowest positions, more powerful and rewarding roles opened up for the old-timers. Furthermore, the establishment of the state with all of its branches and agencies (army, foreign office, public health, and state-sponsored science) provided new careers for which the better-educated and more-experienced Europeans were the favored candidates.

The national security factor.—Israel's involvement in its short history in a fierce struggle for survival has obviously had a unifying effect.[6] This unifying effect can be subdivided into three components. (1) *Interdependence of fate:* It is clear that military defeat is perceived as a threat to the interests of all Israeli Jewish ethnic groups. (2) *A common goal:* While interdependence of fate may be passive, like the dependence of a whole village on rain, it can also be active. A common interest can be achieved by coordinated efforts. This kind of active interdependence is even more unifying if individuals or groups feel that their survival depends upon their cooperation. (3) *An outlet for aggression:* If the common goal happens to be the defense against a common enemy, an additional unifying element exists—antagonistic and aggressive impulses now have a legitimate outlet and target.

Theoretically, it seems reasonable to claim that Israel has a good chance to avoid the explosive consequences that can result from ethnic differences. This notion is based on three postulates. The tendency toward ethnic integration is increased if (1) a body of cultural symbols exists with which everyone can identify; (2) if societal resources are in a state of rapid expansion; (3) if a threat originating from a common enemy is perceived. While this summary contains an optimistic prediction, it also indicates the price a society is likely to pay. A full evaluation of this price is beyond the scope of this paper. I should like only to hint at it in a very general sense.

The unifying function of religious and national symbols might lead to an overemphasis of these symbols beyond the level that most individuals

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labor market.) Unskilled labor and skilled labor are complementary factors of production. Therefore, salaries for unskilled workers decreased relative to incomes of more professional workers. This tendency was less marked in the sixties when the increase in unskilled labor supply leveled off. In addition to that, more young immigrants achieved better training. While income differentiation between professionals and nonprofessionals still increased somewhat, this tendency was more than offset by more advanced skills attained by the immigrants so that the overall gap between immigrants and old-timers tended to decrease (but see original exchange in Eisenstadt 1966).

[6] J. T. Shuval (1962) raised the following considerations: Whether the threats expressed by several Arab leaders to destroy Israel and kill or expel its citizens were real or propagandistic is irrelevant for our purpose. The unifying function is due to the perceived threat, whether real or not.

would consider appropriate. Politically, this is likely to effect those groups most closely identified with these symbols, to diminish the status of those not associated with these symbols, and to reduce their participation in public life.

A society may become "addicted" to the continuous growth of resources—immigration, manpower, land, or, most important, capital. A pause in growth may create severe intergroup problems along with the economic problems.

Finally, the position of a society toward its enemies and opponents might tend to harden beyond what would have been expected on the basis of rational self-interest.

Of course each of these problems is likely to arouse resisting forces which are just as deep-rooted in Israeli society and culture. Nevertheless, these are potentialities of which anyone concerned about Israeli society should be aware.

RELATIONS BETWEEN JEWS AND ARABS

It is a commonplace that the relationship between Israeli Jews and Arabs as ethnic groups has to be understood in the context of the wider Arab-Israeli conflict. Israeli Arabs do not deny their familial, cultural, and religious ties to the belligerant Arab states; they are enemy-affiliated minorities. There also exist some unique circumstances shaping the relations between the two peoples. First, Arabs in Israel are a recent minority. Until 1948, there was statistically a clear majority of Arabs in Palestine, although they had no sovereign power. While a minority within Israel's borders, Arabs constitute the overwhelming majority in the surrounding region. They are a minority without a political and cultural elite, a village population which had been accustomed to following the leadership of towns such as Jaffa, Haifa, Nablus, and Beirut. The 1948 war emptied some of these towns and severed the connections with the rest. The resulting lack of trained and accepted leadership increased the vulnerability of the Arabs to Jewish economic and cultural influence.

While Arabs feel a deep resentment against the Jews, they are also attracted to them by a combination of cultural and practical motives. Palestine was not merely the meeting place of two national movements but also of two different life-styles. The modern and sometimes socially innovating Jewish sector confronted a largely rural and traditional community. While they are perceived as the main source of the Arabs' misfortunes, Jews have provided many Arabs with the only access to an advanced technology, broadened consumption, and modern political ideologies.

Arab attitudes toward Jews and the State of Israel vary according to

the degree of modernization achieved. The more traditional rural Arabs who are still organized in extended families controlled by "elders" or patriarchs view Jews mainly as bearers of a foreign way of life, as a threat to the harmony and integration of their community.

As long as the village community is left alone to pursue its own course, and Jews neither interfere in internal affairs (even in demonstrating different kinds of behavior) nor impede the immediate economic interests of the village, a modus vivendi with a Jewish regime can be found. The traditional village of the Middle East has known and outlived many regimes and has developed mechanisms for coping with them while preserving its own unique structure. This is not to imply that relations between Jews and the traditional elements are, or ever have been, idyllic. But being a small, dense, and extremely active society, the Jews did interfere in the internal life of the Arab village. Some interference was unintentional, such as displaying a modern way of life to the villages. Some was deliberately designed to bring modernity to the Arab village. Although Jewish authorities did try to cooperate with the traditional ruling elite, the impact of Jewish modernity brought about a gradual erosion of the authority of the elders.

The younger, modernized Arabs were much less concerned with the stability of traditional rural society, being themselves engaged in conflict with the traditional leadership. There is no disagreement between these Arabs and most Jews that the modernization of the Arab village is both desirable and inevitable. The only dispute is over the speed of the modernization process and the proper means to encourage it. But while the cultural element in the dispute concerning these young and progressive elements is relatively de-emphasized, the political conflict is considerably aggravated. The young educated Hebrew-speaking and European-dressed Arab whose tradition and religious symbols of identity have been eroded is, nevertheless, not admitted into Jewish society. As a result, the need has emerged for new symbols of identity. This new identification must be broad enough to include the shared experience and interests of Arabs all over the country and sufficiently narrow to differentiate Arabs from Jews. An extreme nationalistic ideology satisfied both these needs. Thus, as modernization proceeded, the cultural and economic conflict between Arabs and Jews weakened while the political conflict was reemphasized.[7]

The attitude of Jews toward Israeli Arabs is obviously dominated by the struggle against the Arab world. The actual ties of Israeli Arabs to the external enemy are, however, exaggerated by some psychological factors. Israeli Arabs are weak and easily selected scapegoats toward which aggressive impulses can be channeled. Israeli Arabs are the first non-Jews

[7] Elsewhere, I (1970) present a detailed discussion of these trends.

to live under Jewish domination during the 2,000 years of Jewish history. Some of the historical fear, mistrust, and resentment toward the Gentile ("goy") is undoubtedly transferred to the Arabs. This tendency was especially marked among Jews of Middle Eastern descent who, until recently had been dominated by an Arab majority. Mistrust toward Israeli Arabs was also exaggerated sometimes by Jewish authorities in order to justify some of the measures taken against the Arab population (the military rule and the confiscation of more than 40 percent of Arab land). Thus, while defending the military rule in the Knesset, Ben-Gurion announced his "understanding" of feelings of animosity on the part of Israeli Arabs, saying that he would feel the same if he were in their position.

Finally, Arabs were regarded by Oriental Jews as a negative reference group, the kind of people, society, and culture one should get away from in order to be fully accepted in the European-dominated mainstream of Israeli life.

During the years 1962–67, the position of Israeli authorities toward the Arab population was considerably liberalized. This can be attributed to a combination of motives: commitment to democratic values (reinforced by increasing pressure by Israeli intellectuals), sensitivity to external public opinion, and tranquility on the borders. As a result, military rule and other limitations on free movements were abolished. But the frequency of hostile and prejudiced attitudes among the population-at-large remained almost unchanged. Jewish hostility toward the Israeli Arab was increased by the rapid succession of fear before the 1967 war and contempt immediately afterward. This negative turn in Jewish public opinion was soon reinforced by Arab belligerent activities in which some Israeli Arabs collaborated.

For Israeli Arabs, the violent confrontation between Israel and the Arab world in 1967 was a fatal blow to their carefully balanced identity. The widespread belief among Israeli Arabs that they could and should maintain a neutral position in the conflict between their country and their people was shaken. When communication between Israeli Arabs and their relatives and former friends in the occupied territories was reestablished, the Israeli Arab assumed at first the role of a guide by virtue of his long acquaintance with the Jews and with Israel. But a few months later, the positions of the guide and the guided were reversed. The leadership of West Bank towns such as East Jerusalem and Nablus reestablished its traditional authority, and many Israeli Arabs felt themselves once again integrated into a wider Arab community; the pressure on those Israeli Arabs who wanted to retain some impartiality became almost unbearable. For many young Arabs, this agonizing dilemma existed, not merely on the ideological level, but on the practical one as well. Because of their superior knowledge of Israeli geography, language, and

customs, Israeli Arabs were often the focus of outside pressure to participate in these raids. Every time such a collaboration is discovered, Jews express mistrust and outrage toward the entire Arab community, and the generalized hostility in turn discourages those Israeli Arabs who still want to remain loyal. In this way, the investments of good will which have been made by both parties in the last eight years are gradually lost in a vicious cycle of suspicion, terror, oppression, and retaliation.

METHOD AND DATA

The findings are based on several studies carried out in Israel before and after June 1967. The purpose of the studies was to delineate the structure of ethnic relations. Due to the unexpected occurrence of the war, we had the rare opportunity to test, by replicating some of our procedures, the impact of the outburst of violent conflict on the values and attitudes of both Jews and Arabs. Briefly, the projects on which we drew are:

1. A study of ethnic identity and relations among Jewish ethnic groups (Peres 1967, 1968*a*). The sample included 675 secondary school students of both sexes and fifty-one of their parents. Sampling procedure: 117 secondary schools were selected at random. Written questionnaires were administered to 50 percent of all eleventh graders (ages 16–17). Since the questions were too numerous, two different questionnaires had to be used. For this reason the *N* in the various tables may vary. Almost all items in these questionnaires were "closed ends."

2. A study of ethnic attitudes among residents of Tel Aviv (Peres 1968*b*). Four hundred and fifty adults were interviewed; 200 of them were interviewed twice (winter 1967 and winter 1968) and 250 only once (winter 1968). The sampling procedure was an ecological cluster sampling (certain blocks were randomly selected) with an over-representation of low-status neighborhoods in which more Jews of Oriental background are likely to live. The interviewing was based on a questionnaire which might be described as "open-ended." No preformulated categories were read to the subjects, but once a response was given it was coded immediately. In cases of doubt, the respondent was asked (*after* giving his spontaneous reply) which of the categories would best fit his answer.

3. A study of ethnic attitudes among Israeli Arabs (Peres 1970), carried out in the summer of 1966 and the fall of 1967. The sample of 500 respondents was also clustered. First, eight predominantly Arab settlements were selected according to the following strata: religious affiliation, degree of urbanization, region, and size. Then residents of these settlements were selected according to the following categories: (1) high school students (ages 14–18; *N* = 200); (2) parents of these students (ages 35–70; *N* = 100); (3) working youth (ages 14–18; *N* = 100); (4) young

adults (ages 20–35; $N = 100$). The interviews were performed by the open-ended method mentioned above.

The main problem which confronted me in all these studies was the problem of objectivity. An investigator studying ethnic relations in his own society is often identified with his group of origin. In times of political tension, he may also be suspected of collecting information for intelligence purposes. We tried to minimize the detrimental effect of these fears and suspicions (there is no way to eliminate them) by employing two principles: (*a*) the groups studied were represented in the investigating team throughout the project; (*b*) great caution was taken to ensure the confidentiality of the data, even at the risk of weakening the principal investigator's control over field work procedures.

Among students of the Hebrew University we were able to find members of different Jewish groups as well as Moslem and Christian Arabs willing to cooperate in the project. Arab interviewers performed the bulk of the interviewing of Arab respondents, but some of them also took part in every other activity of the research team, from the initial design to the final report. Confidentiality was insured by omitting the clearly identifying information. Interview reports in the Arab section did not include names or addresses, which made it impossible for the investigator to follow up the interview or check on the work of the interviewers. Among Jewish respondents, the level of suspicion was much lower, and names and addresses could be recorded.

FINDINGS

Not all the situations, relationships, and processes which were alluded to in the Introduction can be substantiated by the findings. First of all, since these findings relate to perceptions and attitudes, power relations and economic dependencies were not observed directly. Admittedly, the validity of attitude indicators is always somewhat questionable. Even in this study, we have evidence that irrelevant factors like the interviewers' nationality or attitude affected individual responses. Nevertheless, there are some good reasons to believe that the overall trends revealed by tables 3–6 indicate attitudes of various Israeli ethnic groups toward each other.

Relations among Jewish Ethnic Groups

Social distance.—The more intimate and binding the social relationship in which one would agree to participate with another person, the smaller the social distance from this person. Typical examples of social distance items are the readiness to marry or live in close proximity with members of a different ethnic group[8] (see Matras 1965).

[8] As on the same block.

TABLE 3

ATTITUDES TOWARD MARRIAGE AND SHARED NEIGHBORHOOD WITH ORIENTAL JEWS (RESPONDENTS: EUROPEAN HIGH SCHOOL STUDENTS)

Item	Definitely Agree	Agree	Agree but Prefer Own Neighborhood	Disagree	*N*
Marriage..........	15%	24%	39%	21%	143
Neighborhood.....	23%	40%	35%	2%	143

SOURCE.—Peres 1968*a*.

TABLE 4

ATTITUDES TOWARD MARRIAGE AND SHARED NEIGHBORHOOD WITH EUROPEAN JEWS (RESPONDENTS: ORIENTAL HIGH SCHOOL STUDENTS)

Item	Definitely Agree	Agree	Agree but Prefer Own Neighborhood	Disagree	*N*
Marriage......	30%	51%	16%	2%	195
Neighborhood...	30%	55%	11%	1%	195

SOURCE.—Peres 1968*a*.

TABLE 5

ATTITUDE TOWARD MARRIAGE AND RENTING A ROOM TO AN ORIENTAL JEW (RESPONDENTS: TEL AVIV ADULTS, EUROPEAN)

Item	Definitely Agree	Agree	Agree but Prefer Own Group	Disagree	*N*
Marriage..........	37%	20%	19%	24%	204
Renting a room...	37%	30%	7%	16%	204

SOURCE.—Peres 1968*b*.

TABLE 6

ATTITUDE TOWARD MARRIAGE AND RENTING A ROOM TO A EUROPEAN JEW (RESPONDENTS: TEL AVIV ADULTS, ORIENTAL)

Item	Definitely Agree	Agree	Agree but Prefer Own Group	Disagree	*N*
Marriage..........	85%	10%	3%	3%	239
Renting a room.....	65%	25%	5%	5%	239

SOURCE.—Peres 1968*b*.

Tables 3, 4, and 5 reveal considerable social distance between Jews of European and Oriental descent, and the majority of respondents had at least some reservations about involving themselves "too closely" with the other group. It is remarkable, however, that only a small minority expressed clear antagonism to a close involvement, which suggests the existence of a powerful norm against the exclusion of other Jewish groups. While private preferences for intra-ethnic contacts are admitted, it does not seem permissible to elevate these preferences to a principle.

Social distance between Europeans and Orientals is asymmetrical: Orientals accept Europeans more than vice versa. This result is particularly evident when comparing tables 5 and 6. The outstanding difference between tables 3 and 5 and tables 4 and 6, respectively, was unanticipated and scarcely explainable. The questions about marriage asked in both studies were identical, and questions about neighborhoods were similar Nevertheless, the distribution was quite different. This difference may be attributed to the different mode of interviewing (the interview vs. the questionnaire), to different location of the subjects (Tel Aviv vs. the entire country), or to age differences (high school students vs. adults). At present, we are unable to isolate these factors. In considering the validity of these distributions, note, however, that the percentage of those European high school students who definitely accepted intermarriage with Orientals exactly equals the percentage of mixed couples in the entire population of Jewish married couples (see Matras 1965, tables 2 and 5).

By using similar social distance questions, we found that, among Europeans from different countries of origin, social distance is considerably smaller than the above-mentioned distances, while, among Orientals of different countries of origin, it tends to be even larger than the distance between Oriental and European Jews.

In interviews or in written comments added to questionnaires, some respondents tried to explain their attitudes. Refusal to intermarry with Orientals is usually justified on grounds of a cultural gap or a different mentality, rather than explicitly in terms of racial inferiority. Typical reactions would be, "I prefer to marry somebody of my own background because of the importance of having the same mentality," or "I wouldn't want to have a cultural gap in my family," or, more specifically, "I can't see myself married to a man who wants to have about twelve children."

Sometimes prejudicial overtones are revealed while arguing for a favorable attitude: "I will marry the one whom I love, even if he is Oriental." Most Orientals accept intermarriage; some even prefer it. One outspoken respondent said, "I wouldn't only agree, but would even prefer it [to marry a European]. First of all, if I marry a girl of my own community, this will not contribute anything to bringing the communities closer.

Second, I believe marriage with a European would result in better children."

Stereotypes and prejudices.—The possible specific indications of generally prejudiced attitudes are many. In order to diminish the arbitrariness of selecting a few of them, we chose two very broad items, one claiming that unfavorable evaluations of Orientals are, according to Allport's well-known term, "earned," that is, reflect reality. The second claims that, although the current backwardness of non-Europeans may be reduced, it can never be totally abolished.

In order not to employ only abstract stereotypes, we added a concrete claim (that Oriental neighborhoods are dirty), which is also well known in the literature on prejudice and stereotypes. In order to overcome possible reluctance on the part of respondents to express prejudiced attitudes, we added the phrase, "Some people say," to each claim. This was also intended to disengage the interviewer from these prejudiced statements. Our pretest indicated that none of these stereotypes was attributed to Europeans, so we had to use a special item which stated that Europeans are emotionally "cold and unresponsive—the shortcoming most frequently ascribed to Europeans in our preliminary unstructured interviews.

Table 7 shows that prejudice against Orientals is, on the average, as

TABLE 7

PREJUDICE AGAINST ORIENTALS

Question	Ethnic Group	Definitely Agree	Agree	Disagree	Strongly Disagree	N
Some people say that, for prejudices to be abolished, Orientals must rid themselves of their shortcomings. What's your opinion?	Orientals	26%	17%	34%	23%	246
	Europeans	23%	20%	39%	18%	204
Some people say that, even though Orientals may progress a lot, they will never reach the level of Europeans. What's your opinion?	Orientals	18%	16%	30%	37%	246
	Europeans	8%	17%	39%	35%	204
Some people say that neighborhoods where Orientals live seem always to be dirty. What's your opinion?	Orientals	27%	38%	21%	14%	246
	Europeans	20%	39%	29%	12%	204

SOURCE.—Peres 1968*b*.

strong among Orientals as among Europeans. This might be interpreted as a certain degree of self-contempt on the part of the Orientals, probably originating from an acceptance of European prejudices.[9] It should be remembered, however, that many Orientals think of *other* Orientals (not only different individuals but different subgroups) when expressing this kind of prejudiced attitude (table 8). (This tendency will be discussed later in detail.) Table 8 shows that even the relatively mild allegation against Europeans is rather rare; only a quarter of the Orientals express prejudice, and Europeans reject it altogether. Thus the asymmetry which was found in analyzing social distance recurs here. Europeans are perceived by Orientals more as a guide or reference group than as an "oppressing majority."

Feelings of interdependence.—In most studies of ethnic relations, negative aspects are carefully explored, while such positive feelings as mutual attraction and interdependence somehow escape the attention of the interviewers. In most studies, the most extreme positive attitude a respondent could have is to regard people of a different background "simply as human beings," that is, to disregard their ethnicity. Our findings indicate that in Israel social distance and prejudice are at least partially balanced by a sense of interdependence and by the desire for a fully integrated society in the future. When asked whether it would be better for the country if there were fewer of the other group, a clear majority of both Europeans and Orientals said "no."[10] Again, the Orientals' attitude toward the Europeans was more favorable than vice versa. Some of the justification referred to the need to have more Jews in Israel, whatever their background. Some, however, referred to characteristics of the other group which seemed constructive.

"If the Europeans hadn't founded this country, we would have had nowhere to come," one Oriental woman said. Another simply stated,

TABLE 8

PREJUDICE AGAINST EUROPEANS

Question	Ethnic Group	Definitely Agree	Agree	Disagree	Strongly Disagree	N
Some people say that Europeans are emotionally cold and unresponsive. What's your opinion?	Orientals	13%	14%	26%	47%	246
	Europeans	3%	8%	41%	48%	204

SOURCE.—Peres 1968*b*.

[9] Shuval (1966) reports on the actual manifestations of self-rejection.

[10] R. M. Williams (1964, p. 410) adapted this item as an indicator of prejudice.

"We need the Europeans; they are the brain." A European respondent said, "The Orientals coming in their great numbers saved the state and its European old-timers. If they hadn't come, we would be now a negligible enclave in an Arab ocean."

The desire for integration.—Ethnic attitudes should be analyzed in the context of their time perspective. Are current characteristics and relationships perceived as enduring and permanent, or are they flexible, developing toward a more egalitarian (or possibly less egalitarian) solution? Many observers view prejudice as an attitude not only negative but rigid, as an expression of an eternal truth for the past which will continue to apply in the future.

Since, in Israel, the common historical root (ancient Israel) is always emphasized, the notion of inherited inferiority is extremely rare. Ethnic differences are perceived as cultural, acquired in the various societies of exile. When considering the future, most Israelis view ethnic differences as something which can and should eventually disappear. Table 9 indicates that a majority disagrees with the prediction that Orientals will never be able to close the gap between themselves and the Europeans. Tables 9 and 10 summarize the responses to these questions: "In your opinion, is it desirable that the present differences between ethnic groups

TABLE 9

ATTITUDES TOWARD DIFFERENCES BETWEEN JEWISH ETHNIC GROUPS IN THE FUTURE

Ethnic Group	Differences Should Remain as They Are	Differences in Tradition Should Remain	All Differences Should Disappear	Total
Orientals	2%	24%	75%	195
Europeans	2%	34%	64%	143
Total	3%	28%	70%	338

SOURCE.—Peres 1968a.

TABLE 10

EXPECTATIONS ABOUT DIFFERENCES BETWEEN ETHNIC GROUPS IN THE FUTURE (20 YEARS)

Ethnic Group	Differences Will Remain as They Are Now	No Substantial Differences Will Remain	No Differences Will Remain	Total
Orientals	13%	44%	42%	264
Europeans	19%	58%	23%	204
Total	16%	50%	33%	450

SOURCE.—Peres 1968b.

in Israel should disappear?" and "Do you think that twenty years from now differences between ethnic groups will disappear?" Our subjects tend both to expect and endorse the reduction of inter-ethnic differences. These responses do not lend any support to the notion that Orientals in Israel are "forcefully Westernized."[11] As a matter of fact, Orientals are slightly more eager to abolish differences, while Europeans are slightly more concerned about preserving ethnic traditions.

We encouraged interviewees to elaborate the kinds of ethnic tradition they would like to preserve. The positively evaluated differences were almost always stated: "Everybody can keep his traditional life-style at home. In public places, however, an individual should behave just like everyone else." But even at home, special traditions are endorsed in peripheral or aesthetic issues: "We have some old and extremely nice folkways. It would be a pity to lose them." Another typical quotation is, "Why shouldn't everybody keep his own tradition, as long as he doesn't interfere with other people's rights?" As already emphasized, even this partial nostalgia is a minority attitude. The majority of Orientals want complete assimilation and explicitly cite the Europeans as a desirable model. "I wish we Persians could overcome all our superstitions and be more like the Europeans—educated, industrious, and clean." Others urge the development of a new tradition which would be national and non-ethnic: "I hope a new and unified Israeli tradition will emerge."

Jewish Attitudes toward Arabs

Hostility and social distance.—The levels of hostility and social distance increase considerably when Arabs are mentioned. Actually, it was difficult to formulate differentiating questions. During the pretest, the overwhelming majority of the sample tended to concentrate in the negative categories of each question. In some cases, we tried to add another extremely negative category, so that degrees of hostility toward Arabs could be differentiated. Tables 11, 12, and 13 reveal the severity of anti-Arab feelings.

Perhaps the most interesting finding was a tendency for Orientals to be more hostile than Europeans toward Arabs. At first, this discovery seems to be astonishing. It might have been assumed that the Orientals, with close ties to the Arab culture, could serve as mediators between European Israelis and Arabs. However, this is clearly not the case.

Many Oriental respondents sought to explain their negative feelings toward Arabs by referring to previous unpleasant experiences under

[11] M. Seltzer (1967) stresses the argument that Orientals are Westernized against their will and that their specific culture is deliberately destroyed. He implies that the majority of Orientals want to preserve ethnic differences. However, he fails to present any data to that effect.

TABLE 11

SOCIAL DISTANCE FROM ARABS: A COMPARISON BETWEEN ORIENTAL AND EUROPEAN RESPONDENTS

Item	Ethnic Group	No Data	Definitely Agree	Agree	Agree but Prefer a Jew	Do Not Agree	Strongly Disagree	Total
Readiness for marriage...	Orientals	1	0	2%	6%	24%	67%	192
	Europeans	0	0	11%	13%	29%	56%	139
Readiness for friendship....	Orientals	2	0	4%	23%	34%	38%	192
	Europeans	1	3%	10%	27%	32%	27%	139
Readiness for neighborhood..	Orientals	2	1%	7%	32%	27%	32%	192
	Europeans	0	4%	12%	32%	27%	25%	139

SOURCE.—Peres 1968*a*.

TABLE 12

PREJUDICE AGAINST ARABS: A COMPARISON BETWEEN ORIENTAL AND EUROPEAN RESPONDENTS

Item	Europeans	Orientals
It would be better if there were fewer Arabs..	91%	93%
Every Arab hates Jews......	76%	83%
Arabs will not reach the level of progress of Jews. .	64%	85%
Disagree to rent a room to an Arab	80%	91%
Disagree to have an Arab as a neighbor.	53%	78%
Total	204	246

SOURCE.—Peres 1968*b*.

TABLE 13

SOCIAL DISTANCE FROM ARABS: A COMPARISON BETWEEN ORIENTAL AND EUROPEAN RESPONDENTS

Question	Ethnic Group	Agree	Agree but Prefer Own Group	Disagree	Total
To marry............	Orientals	11%	5%	84%	246
	Europeans	9%	11%	79%	204
To rent a room.	Orientals	6%	4%	91%	246
	Europeans	13%	7%	80%	204
To have as neighbor....	Orientals	12%	9%	78%	246
	Europeans	26%	21%	53%	204

SOURCE.—Peres 1968*b*.

Arab domination. This explanation seems insufficient to account for the extreme hostility revealed in the findings. The antagonism of Orientals toward Arabs should be seen in the context of their present illusion as well as a result of past experience. The Orientals feel that they must reject the remaining traces of their Middle Eastern origin to attain the status of the dominant European group. By expressing hostility to Arabs, an Oriental attempts to rid himself of the "inferior" Arabic elements in his own identity and to adopt a position congenial to the European group which he desires to emulate.

If this line of reasoning is correct, then those Orientals most resembling Arabs should be more hostile than others. With this hypothesis in mind, we instructed the interviewers in our second study (Peres 1968*b*) to record the degree of resemblance of each Oriental respondent to Arabs on two criteria: appearance and accent. Table 14 shows that hostility (as expressed in the agreement to two prejudical statements) increases slightly when resemblance to Arabs (as reported by the interviewers) increases. While these findings are not statistically significant, they do seem to be rather consistent. The slightness of the differences may stem from a ceiling effect: the ratio of anti-Arab prejudice is high in all the categories of resemblance to Arabs and therefore cannot increase greatly. If we accept this as an indication of the validity of our hypothesis, we may conclude

TABLE 14

PREJUDICE AGAINST ARABS AMONG ORIENTALS ACCORDING TO THEIR RESEMBLANCE TO ARABS

	Question and Response					
	Arabs Understand Only Force		Arabs Will Not Reach the Level of Progress of Jews			
Degree of Resemblance	Agree	Disagree	Agree	Have Reservation	Disagree	*N*
Do not bear resemblance to Arabs:						
By accent.	84%	15%	79%	7%	13%	42
By appearance . .	87%	13%	77%	7%	17%	35
Bear some resemblance to Arabs:						
By accent.	86%	14%	84%	6%	10%	105
By appearance. . .	83%	17%	84%	5%	11%	143
Bear resemblance to Arabs:						
By accent.	89%	11%	89%	2%	9%	99
By appearance. . .	91%	9%	89%	3%	8%	68

Source.—Peres 1968*b*.

that hostility between Arabs and Jews of Middle Eastern origin exists, not in spite of, but partially because of their many similarities.

Effects of the Six-Day War.—As a result of the Six-Day War, social distance and hostility toward Arabs increased even more. Table 15 shows an increase in four out of five indications of anti-Arab attitudes between 1967 and 1968. It is noteworthy that these data were collected before Israeli-Arab participation in terror raids became known. As you may recall, most Arabs adopted a passive neutrality during the war. Small fringe groups performed very ineffective anti-Israeli activities, while other small groups expressed their loyalty to Israel by actively helping in the war effort. At the time, the latter received much more publicity than the former. It may thus be concluded that the behavior of Israeli Arabs had no effect on the increase of Jewish hostility. This hostility resulted from the overall political situation rather than from local interaction. Generally speaking, the position of an enemy-affiliated minority is endangered when a violent clash breaks out, whatever their attitudes or actual behavior might be. The situation of the Israeli Arab seems to be no exception to this rule.

Arab Attitudes toward Jews

Social distance.—Table 16 reveals that considerable rejection of social contact with Jews does exist among Israeli Arabs. Note that "friendship" is consistently conceived as less binding than neighborhood, as more respondents accept friendship than neighborhood. Some respondents explained that friendship is selective and individual; you can choose your friend personally, but not your neighbor, and neighborhood also involves the entire family. Many Arab respondents, while being quite prepared to have contact with Jews, were anxious not to allow any such contacts to

TABLE 15

NEGATIVE ATTITUDES TOWARD ARABS BEFORE AND AFTER THE 1967 WAR

Question	Year	
	1967	1968
It would be better if there were fewer Arabs	80%	91%
The Arabs will never reach the level of progress of Jews	62%	76%
Every Arab hates Jews	73%	80%
Disagree to rent a room to an Arab	80%	86%
Disagree to have an Arab as a neighbor	67%	67%
Total	200	450

SOURCE.—Peres 1968*b*.

TABLE 16

SOCIAL DISTANCE FROM JEWS

Israeli Arabs	Agree to Make Friends with Jews	Agree to Live in Jewish Quarter	Agree to Live in House with Jews	N
All respondents	58%	42%	30%	464
Students	53%	42%	31%	181
Parents	69%	36%	22%	98
Young adults	57%	44%	36%	90
Working youth	56%	44%	32%	95

SOURCE.—Peres 1970.

the female members of their families.[12] In an Arab rural environment, most people live in their own homes, which are built by or for the family. A family rarely changes its home during the lifetime of one generation. The lack of cars and telephones and the confinement of the women and younger children to the home intensifies contact with nearby residents. Thus, neighbors are extremely important.

On the other hand, "friendship" is offered freely to every casual acquaintance. A villager is expected to invite almost every person he meets to eat or at least have coffee with him. If such an invitation is accepted, both men will define themselves as "friends," and will exhibit a pleasant although uncommitted attitude toward each other. This friendship is less selective and less personal than in Western societies.

If these arguments are valid, then we should predict that traditional parents would be more inclined than their more modernized sons to make friends with Jews but *less* inclined to accept Jews as neighbors. Table 16 substantiates this prediction. While the rejection of social contact with Jews is, as I have said, considerable, it is significantly lower than the Jews' rejection of Arabs. Again, we observe asymmetry in the relations between a dominant and a minority group. The minority member may feel that he may gain by interaction with the majority, while majority members will tend to exclude outsiders because, among other things, they are perceived as potential competitors.

Attitudes toward the State of Israel.—Attitudes which Israeli-Arabs display toward Israel as a political entity seem to constitute a much more severe problem than do their attitudes toward Jews as individuals. Even societies with a long tradition of institutionalized dissent seem to confront a dilemma if dissenters come to question the legitimacy of the

[12] Note that all our Arab respondents were male. Early attempts to interview Arabs of both sexes failed almost completely. A typical reply a female interviewer received when asking to see one of a respondent's four daughters was, "Sorry, but I have no daughters."

society's very existence or the validity of its ultimate values. This dilemma is particularly severe if the society has recently been established and if its continuous existence is not absolutely secure.

As table 17 shows, the right of Israel to exist is not absolutely accepted by our Arab sample. The interesting category is, of course, "Yes, with reservations." The main reservations concern (as one might expect) Israel's treatment of the Palestinian Arabs. About half of those who chose this response explicitly mentioned repatriation of the refugees as a condition for Israel's right to exist. Others emphasized mainly the granting of full first-class citizenship to those Arabs now residing in Israel. Comparing the subgroups in the sample, the most striking difference is between students and parents. (The parents are the fathers of the students who were interviewed, so that the differences cannot be attributed to different family background.)

The tendency of the young Israeli-educated Arab to display extreme nationalistic and sometimes hostile attitudes (revealed also in tables 18 and 19) calls for special attention. Note that these young people are relatively similar to their Jewish counterparts in most nonpolitical respects, a similarity which draws them closer to Jewish individuals. They are also

TABLE 17

HAS THE STATE OF ISRAEL A RIGHT TO EXIST?

Israeli Arabs	Yes	Yes, with Reservations	Refuse to Answer	No	*N*
All respondents	31%	49%	4%	16%	470
Students	24%	49%	3%	24%	192
Parents	54%	41%	2%	3%	96
Young adults	25%	61%	4%	10%	89
Working youth	29%	44%	6%	20%	93

SOURCE.—Peres 1970.

TABLE 18

DOES THE SUBJECT FEEL MORE "AT HOME" IN ISRAEL OR THE ARAB STATES?

Israeli Arabs	In Israel	Neither	In One of the Arab States	*N*
All respondents	37%	15%	48%	462
Students	31%	12%	57%	188
Parents	54%	18%	27%	92
Young adults	35%	18%	47%	88
Working youth	36%	11%	53%	94

SOURCE.—Peres 1970.

TABLE 19

ARE THE ARABS BOUND TO WAGE ANOTHER WAR?

Israeli Arabs	Yes	Yes, If Militarily Possible	Yes, If Israel Stays Put	No	N
All respondents.....	35%	4%	15%	46%	460
Students...........	45%	4%	13%	38%	189
Parents............	21%	3%	9%	66%	86
Young adults	30%	2%	19%	48%	89
Working youth.....	34%	4%	22%	40%	96

SOURCE.—Peres 1970.

much better equipped (and more positively motivated) to live among Jews. The traditional village became too small for the wider perspectives and higher aspirations of these young Arabs, so some of them sought acceptance into the Jewish community, but were soon rebuffed. Their experience discouraged others. The second possible alternative for expanding an individual's horizons beyond the confines of the village would be an identification with the surrounding Arab world. Table 18 indicates that students, and to a degree other young people, feel relatively more "at home" in an Arab country, while parents tend to feel more comfortable in Israel.

The impact of the war.—The impact of the war on the Arab population in Israel should be understood in the light of the expectation of any Arab victory by the overwhelming majority. The Arab defeat thus shocked them almost as much as it did the Arabs across the border (see table 20). The humiliation of defeat could be met only with new pride, and the despair of the defeated Arab populations aroused stronger sympathy and loyalty. Thus we observe in table 21 that the war served to increase the Arabs' hatred rather than their respect for the State of Israel. While table 21 deals with the respondent's perception of a change over time, the change is better recorded by comparing responses to identical questions posed to Arab respondents before and after the war. Table 22 indicates that *more* Arabs now feel at home in the Arab world and fewer feel at home in Israel. Similarly, according to table 23, fewer Arab respondents tend to see their future as positively bound with Israel.

CONCLUSION

Ethnic relations do not exist in a vacuum, but are interwoven with other facets of social structure and environment. This general perception is specifically true about Israel, a country in which some ethnic problems

TABLE 20

EXPECTED RESULTS OF THE WAR: WHEN THE WAR BROKE OUT, WHO DID YOU THINK WOULD WIN?

The Arabs	No One	Israel, but a Less Decisive Victory	Israel	*N*
67%	18%	5%	9%	457

SOURCE.—Peres 1970

TABLE 21

THE PERCEIVED INFLUENCE OF THE WAR ON THE ARABS' ATTITUDE TOWARD ISRAEL: HOW, IN YOUR VIEW, DID THE WAR INFLUENCE THE ARABS' EVALUATION OF THE STATE OF ISRAEL?

Attitude	Rose	Remained the Same	Fell	*N*
Respect	43%	17%	40%	299
Despair	52%	34%	13%	282
Hatred	73%	23%	4%	291

SOURCE.—Peres 1970.

TABLE 22

FEELING MORE AT HOME IN ISRAEL OR IN AN ARAB COUNTRY BEFORE AND AFTER THE JUNE WAR (HIGH SCHOOL STUDENTS ONLY)

Attitude	1966	1967
More at home in Israel	62%	31%
No difference	14%	12%
More at home in an Arab country	23%	57%
N	117	188

SOURCE.—Peres 1970.

TABLE 23

POLITICAL FUTURE PERSPECTIVES, BEFORE AND AFTER THE WAR: WHAT WOULD YOU LIKE THE FUTURE OF THE ISRAELI ARAB TO BE? (HIGH SCHOOL STUDENTS ONLY)

Response	1966	1967
They will become part of the Jewish public	6%	...
A separate but equal people within the state of Israel	81%	53%
They will be in a separate state of their own	13%	17%
An Arab state will arise in the *entire* territory of Palestine	Not asked	19%
N	116	191

SOURCE.—Peres 1970.

seem to be very close to solution while others may be close to explosion. This contrast can be explained in fact by the distinctive functions which the Oriental Jews and the Arabs perform for Israeli society.

After the diminution of European Jewish immigration to Israel, the mass immigration from the Middle East reestablished the young state's movement toward its declared goals. Orientals occupied the vacant land and houses abandoned by the escaping Arabs, joined Israel's armed forces, and provided a sound justification for mobilizing economic, cultural, and political aid from world Jewry. In short, Orientals contributed to Israel's survival and progress in ways that Israeli Arabs were in no position to do. Even the most moderate and loyal individuals among them could not fully identify with the country's Zionistic zeal, with its commitment to Jewish immigration, and, most important, with its struggle against the Arab world. These different backgrounds were further polarized when the three main ethnic groups (European Jews, Oriental Jews, and Arabs) began to interact. The Orientals aspired to full integration into the mainstream of Israeli life. This meant a movement away from their Middle Eastern (that is, Arab) background and toward the dominant European group. Arabs became for the Oriental Jews a "marking-off" group which symbolized everything resented and dispensable in their own background. The threat of surrounding Arab hostility became a catalyst for increasing unity among Israeli Jews, while the nonviolent but intense hostility against the Arab minority was a negative manfestation of this otherwise encouraging unity.

From the Arab minority's point of view, the need for full participation in the country's social, economic, and political life became more urgent, while the prospects for such participation did not increase. Thus, the most dynamic and competent individuals who might have been the pioneers of integration under different circumstances became the most outspoken advocates of political hostility. One of the most tragic aspects of the conflict between Israel and her Arab neighbors is that the two groups who could be potential mediators—the Israeli Jews of Middle Eastern background and Arabs of advanced Israeli education—are the least motivated to strive for reconciliation.

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Intellectual Achievers: A Study of Eighteenth-Century Scotland[1]

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Eighteenth-century Scotland produced many important intellectual leaders. Study of the lives of the individual achievers as well as the parishes in which they were born and educated indicates that education was the key to achievement and that most of the achievers came from urban areas, were born into the upper middle class, attended university, and lived longer than the average person. In sum, the eighteenth-century Scottish achiever seems to resemble his twentieth-century counterpart in many ways.

Throughout history there are societies and peoples which seem to have periods of great intellectual achievement and contribute eminent men in numbers substantially out of proportion to their population. Coming readily to mind are such societies as Athens during its Golden Age, Renaissance Florence, Elizabethan England, seventeenth-century Holland, and the German- or Yiddish-speaking Jews of the late nineteenth century and first part of the twentieth century. There are many others. Historians have long been interested in trying to explain these spurts of creativity, but even when they have concentrated on a particular society or time period such as the Renaissance (Ferguson 1948) they have not always been able to agree on answers, let alone answers which might hold for more than one society or period.

Historians have not been the only group interested in trying to explain why some societies seem to produce more than their share of men of genius, as witnessed by the rapidly growing literature on creativity (Ghiselin 1952; Bloom 1964; Kagan 1967; Coser 1969). The anthropologist A. L. Kroeber (1944) held that, since biological proclivity to genius was probably randomly distributed in populations, the differential rate of accomplishment from one period to another or between societies must necessarily be related to cultural factors. Florence Kluckhohn (1961) attempted to distinguish the value systems of various cultures as they related to achievement. David McClelland (1961), a psychologist,

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adopted the cultural answer, relating achievement themes in the literature of a society to its economic development.

The cultural approach, however, leaves some questions unanswered. Why do certain societies develop a need for achievement or produce a climate in which achievement is favored? Undoubtedly, social structural variables must also be investigated. Here sociologists have made important contributions, although they have generally addressed themselves to the question of economic development rather than intellectual achievement (Weber 1930; Parsons and Smelser 1956; Smelser and Lipset 1964). More closely related to this research is a pioneering study by Joseph Schneider (1938). He examined the backgrounds of eminent Englishmen born between 1400 and 1850 and found that social class origins were related to the type of achievement of the individual. It seems that the best way to approach the problem is to use an interdisciplinary approach.

As a start it was decided to do an in-depth study of one society during the period of its greatest intellectual achievement. To do such a study, it was necessary that there were sufficient source materials readily available, that there was more or less accurate information about the size of the population and other social and economic data, and that the society was small and compact enough to be studied in detail. The society that most satisfied the requirements was Scotland in the eighteenth century. The eighteenth century was the Golden Age of Scottish intellectual achievement, with Adam Smith, David Hume, James Watt, Robert Burns, Sir Walter Scott, James Mill, James Boswell, and numerous other figures active during the period.

On the other hand, Scotland before the eighteenth century had produced few men with more than local reputations. By the end of the century, however, Scotland had forged ahead in many realms of scholarship and learning—science, medicine, imaginative writing, creative art, and technology. Her universities were known throughout Europe and America, and her poets, novelists, artists, philosophers, historians, scientists, physicians, and engineers were among the most innovative and prominent in Europe. Edinburgh, the capital of Scotland, came to be known as the Athens of the North.

At the same time, Scotland had a background of poverty. In the seventeenth century, it was regarded as one of the poorest countries in Europe. By the end of the eighteenth, it had begun to emerge as an industrial and commercial leader in Europe. How did an economically underdeveloped country manage to move to the forefront of the European intellectual and economic scene? Did an increase in prosperity work to increase intellectual achievement, or were there more subtle

relationships? In effect, what caused the transformation of Scotland from a cultural backwater to a position of intellectual leadership?

In general, the answers given by historians can be categorized as: the effects of population growth, the introduction of industrialization, the improvements in agriculture (Stirling 1906; MacDonald 1937; Campbell 1965), and the 1707 Act of Union with England (Linklater 1968), and the influence of John Knox's Presbyterian reforms in education (Pryde 1962; Davis 1964). Growing urbanization and the development of a larger middle class must also be considered as contributing to the achievements of the century.

A two-step methodology was used; both the innovative men and the areas they grew up in were studied. First, a comprehensive sample of eminent men were selected through a survey of standard reference works in the history of science, medicine, engineering, literature, art, and so forth. This list was then compared with those men included in the *Dictionary of National Biography* (*DNB*) (1885–1901) who achieved eminence in intellectual fields; we eliminated most of the military leaders or political figures whose accomplishments in reaching high office alone led to their being included in the *DNB*. We also eliminated large numbers of religious figures who were important in the administration of the Scottish church but were not necessarily important as innovative intellectual leaders. The result was a population of 375 individuals (364 men and eleven women). Biographical studies were done for each of these, in an attempt to determine where they were born, where they were educated, their social class background, their level of education, their place in the family constellation, and so on.[2]

It was found that the 375 subjects in the eminent population had been born or educated in 175 of the 938 parishes in existence in eighteenth century Scotland. Only 104 parishes had eminent people educated within their boundaries. This allowed some comparisons between contributing parishes, but a second step was included to extend the study somewhat further. A random sample of seventy-one noncontributing parishes were drawn as a control group from the various volumes of Sir John Sinclair's *Statistical Account of Scotland* (1791–99), giving a total of 246 parish units, approximately 25 percent of the total number of parishes in existence.

Although the parish was a religious unit, for elementary educational purposes it was also a political unit, and most of the available statistics for eighteenth-century Scotland are for parish units. Some parishes were classed as royal or ducal burghs, which suggests an urban character, although burghs varied in size and some so classified were little more than

[2] A total of 200 works were consulted, including manuscript sources. These are much too numerous to list in the references.

villages. In the sample, forty-nine (20 percent) of the areas were listed as burghs; that is, the parish either had a self-governing burgh within its boundaries or it was encompassed within a burgh. An attempt was made to describe each parish in terms of its population (including changes during the century), the state of industrialization or of agricultural reform, the nature of elementary education, the prosperity of the parish, and other features.

Space does not permit us to report all of the findings in the study, but some of the conclusions regarding the parish data, including population, economic development, and the nature of the educational system, have been reported elsewhere (Bullough 1970). It was found that a significant factor in predicting which areas of Scotland would produce eminent men was the educational system of the parish. Though urbanization, prosperity, and union with England were important, as was the incipient Industrial Revolution, the greatest results were achieved in those parishes which were able to apply some of the new sources of revenue to the expansion of the school system or to encouraging the growth of specialized teaching in the parish school system.

What kinds of backgrounds did the individual achievers have in common? Here, there were some significant findings. In light of the findings about contributing parishes, it was evident that one of the hypotheses of the study should be that there would be a greater chance for an individual to achieve intellectual eminence if he was born in an urban or suburban parish. In fact, only twelve individuals (3 percent) were born in parishes with less than 500 people. The median population of the parishes in which eminent people were born was approximately 2,800, and this was much larger than the average for Scottish parishes of that time. The importance of urbanization (in eighteenth-century terms) as a factor in intellectual achievement is emphasized by the finding that 117 subjects in the sample (31 percent) were born in parishes of over 8,000 people, a size which would have established them as major cities. Though parish population turned out to be a significant factor in the background of the achievers (Pearson's contingency coefficient = .235), population per se is not the only index of urbanization. To gain a better picture of the birthplaces of eminent men, we set the parish into the context of the shire (or county), the next largest unit of government. Only eleven individuals (3 percent) were born in shires with less than 5,000 population, and in fact a total of only twenty-five came from shires with 10,000 or less population. The population median for the shire in which eminent people were born fell between 60,000 and 80,000, and when it is noted that only six of the shires had more than 60,000 people it seems apparent that those Scots born in the more populous districts would have a greater chance of achieving intellectual eminence, particu-

larly since the total population of those shires under 60,000 was much greater than those over that figure.

Another indication of the nature of the parish is its geographical size, that is, the number of square miles included in its confines. There were several parishes in the highland districts of Scotland which stretched over several miles along both sides of a river valley or of a mountain ridge. Since most parishes at best had only a single parish school, it was hypothesized that the eminent individuals would come from those that were the most compact. When parish size was examined, it was found that 107 individuals (28 percent) were born in parishes of less than four square miles. The median size of the parish in which eminent people were born was under ten square miles. Some of the larger parishes of thirty-five square miles or more were eighteen miles or more long and less than two miles wide. In sum, the data indicate that a compact parish with a concentrated population would be most likely to be the birthplace of eminent men and that an urban background is a factor most of the eminent men had in common. Even the highest density, however, was not very great, and at the beginning of the eighteenth century, Scotland had a little over 1 million people in 938 parishes encompassing 20 million acres of land. Edinburgh, the largest city, had only 30,000 inhabitants.

RELIGION

Scotland was primarily a Presbyterian country in the eighteenth century. There were some dissenting Protestants and a number of Catholics, but Catholics in particular worshiped under severe disabilities. On the other hand, the Presbyterian church was somewhat factionalized, with an established church and various free or covenanting Presbyterian churches. Actual religious affiliation of the parents could be established in only about 55 percent of the cases, although it is safe to assume that the overwhelming majority of those who were unidentified belonged to the established Presbyterian church simply because members of the dissenting, Catholic, Episcopal, or covenanting families were likely to be specifically identified as such.

Only three individuals in the sample (less than 1 percent) were born into Catholic families, a percentage somewhat smaller than the estimated 3 percent of the population who adhered to the Catholic faith. The lower percentage is indicative both of the difficulties a Catholic had to overcome in attending a school and earning a living and of the nature of the Catholic schools. The few Catholic schools which did exist were mainly covert or undercover institutions, and their main purpose was to recruit and educate priests to serve the Catholic population. Compli-

cating these difficulties was a geographical factor—the Catholics were most likely to reside in the more inaccessible and less populated parts of Scotland.

Episcopalians, another religious minority, had a somewhat easier time, particularly in the areas near royal garrisons where the Crown had built Episcopal churches. Moreover, since Episcopalianism was the established church in England, in social terms, its adherents were more likely to be of higher status, at least before the Scottish Rebellion of 1745, which was in part led by adherents of the Church of England. It has been estimated that prior to 1745 at least half of the Scottish nobility belonged to the Episcopal church, and about 14 percent of the ministers in Scotland were classed as Episcopalian. Nevertheless, only twenty individuals (5 percent) were born into Episcopal families.

Double that number, forty individuals (11 percent), came from various kinds of dissenting Presbyterian or other Protestant families. This is probably because even though the dissenters were harshly regarded by the established church, they very often held considerable political power. All the larger towns of Scotland had dissenting or covenanting Presbyterian congregations.

Religious affiliation of the achiever as an adult could be identified in 206 cases (55 percent), but as in the case of the religion of the family, it can be assumed that the overwhelming majority of those whose affiliations were unidentified belonged to the established Church of Scotland. Since achievement often coincides with a breaking of tradition and since the Church of Scotland was the dominant normative force in that period, it was hypothesized that a number of achievers who were born into the established church would not remain members as adults. Ninety-six individuals (26 percent of the total sample) can be definitely identified as belonging to something other than the established Presbyterian church, a 50 percent increase over the number who were born into dissenting or other families.

It was also hypothesized that the achievers would run into other kinds of conflict with the value system of the time, although this proved difficult to measure. Nevertheless, some sixty-three (17 percent) were identified as being involved in some sort of difficulty with the law, mostly over religion or politics, although some were also charged with what we now regard as felonies.

SOCIAL CLASS

The high correlation between socioeconomic status and educational attainment is well documented in contemporary literature (Coleman et al. 1966; Warner, Havighurst, and Loeb 1944; Haverman and West 1952; Floyd, Halsey, and Martin 1957). Though such studies have con-

centrated on contemporary America or Europe, some of the methods utilized might also be applied to the eighteenth century, providing social class can be defined as meaning those aggregates of individuals who occupy broadly similar positions on a scale of prestige. Historical definitions, however, are somewhat more difficult to make than others, but the four-step categorization developed by Richard Centers (1949) proved useful. It was based upon a "lower class" of unskilled workers, a "working class" of manual workers in semiskilled and skilled occupations, a "middle class" of white-collar workers and professionals, and an "elite" differentiated from the middle class not so much in terms of occupation as of wealth and lineage. For this study the categories were upper, upper middle, lower middle, and lower.

In Scottish terms, it can be said that the upper class was made up of the hereditary nobility and the lairds reckoned noble by Scottish heraldic usage. The upper middle class was made up of ministers (the most prestigious nonnoble group in eighteenth-century Scotland), tackmen (holders of leased land who did not farm but sublet the land to tenants), some of the untitled landowners (particularly the heritors, those liable for public assessment), professionals, such as lawyers and physicians, businessmen of wealth and success, military leaders (all officers), university teachers, and so forth. The lower middle class included small businessmen, skilled artisans, yeoman farmers, local teachers, and some white-collar workers, such as clerks. The lower class included all laborers, tenants, and skilled workers in the highlands (who were regarded as servants of the laird), as well as those who were regarded as outcasts by the society of the time. It should be emphasized that some occupations changed status, such as tackmen in the highlands, during the course of the century, and this was taken into account in the classification. The social class of the achievers was based upon the class into which they were born and was determined by the social status of the father, although information was also sought about the status of the mother. It is a commentary on the status of women in the eighteenth century that in a very large proportion of cases it was impossible even to find the name of the mother let alone any information on her social background.

The majority of the achievers, 55 percent, were born into upper-middle-class families. Comparatively few (8 percent) were born into the nobility or upper class, and it was concluded that upper-class status tended to discourage the type of schooling associated with intellectual achievement, since its members already had a secure position in society. This corresponds with the earlier findings of Schneider (1938) for England. Some 27 percent were born to the lower-middle or working-class families and only 10 percent to the lower class, the group which made up the overwhelming majority of the population (probably 90 percent).

OCCUPATIONAL CLASSIFICATION OF THE FATHER

In order to further study background factors, information on the occupation of the father was tabulated. The parental occupation most conducive to producing eminent children was that of minister. A total of sixty-five (17 percent) of the sample were sons (or daughters) or ministers. Next to ministers, the most significant occupational group was lairds or landowners (a group classified in this study as upper or upper middle class). A total of fifty-nine (16 percent) were major landholders in some way or another.

Sons of lawyers also tended to have an advantage in achieving eminence, and twenty (5 percent) of the sample had fathers who were lawyers, advocates, or jurists. University professors also tended to have eminent children, and fifteen (4 percent) of the sample were sons of university professors. Teachers on the lower level, though much more numerous, were not so likely to have eminent children, and only five (1 percent) of those included in the study were sons of teachers in parish schools, academies, or other lower-level educational institutions. Physicians and surgeons fathered nine (2 percent) of the children included in the study. Contributing more in total numbers than the physicans and surgeons, although much less so in proportion to their total population, were tenant farmers, who had fifteen (4 percent) of their sons and daughters included in the sample. Another thirty-four (9 percent) were sons of merchants, grocers, or fathers who were engaged in a trade or craft, and eleven (3 percent) were children of notaries, civil servants, or government officials.

SOCIAL MOBILITY

Achievement in itself seemed to be related to upward mobility. As the data in this study were analyzed, however, it became apparent that there was not so much a sudden leap from one generation to another in intellectual achievement but, rather, a slow building process that took place over several generations. Where the families of individual achievers could be traced back several generations, it was often found that intellectual advancement had begun with the grandfather acquiring some modicum of schooling, perhaps even becoming a schoolmaster, the son becoming a minister, and the grandson achieving intellectual eminence.

FAMILY BACKGROUND

The importance of home environment on achievement has been the subject of several studies (Coser 1969; Goertzel and Goertzel 1962), and it was postulated that certain family factors might have influenced intellectual achievement in the eighteenth century. All of the kinds of information available today for such studies were obviously not available in the

eighteenth century. Some hints, however, can be gathered from the biographical data available to us. Does a child raised by his own parents tend to achieve more readily than one who, through the death of his parents or for other reasons, is shunted off to an institution or to relatives? In attempting to answer such questions, we found it possible to speak with assurance for only about half of the sample. Of those on whom information could be obtained, the overwhelming majority were raised by their own parents and most of the rest were raised by one of their parents. Nineteen individuals (4 percent) were raised by relatives and only three (1 percent) in institutions. In the light of the mortality figures in eighteenth-century Scotland, it would seem safe to say that an individual was more likely to attain intellectual eminence if both parents survived until he reached adulthood. Conversely, it would appear that fewer people in the sample were raised by relatives or in institutions than would have been predicted for the population as a whole, but the difficulty, if not impossibility, of obtaining the data gives only tenuous proof for such an assumption.

A similar paucity of information hampers the finding of the birth order of the persons in the sample. Past studies tend to indicate that it is the oldest or youngest child who becomes the achiever (Altus 1966; Bayer 1966, 1967; Gordon and Gordon 1967; Kammeyer 1967). There has been little verification of such a hypothesis in historical context, and as a result, a determined effort was made to establish the place in the family order of each individual subject. Adequate information was found on 227 individuals (60 percent) of the sample although not in the form used in current research into the subject. Nevertheless, it was possible to determine whether a particular individual was the oldest son or daughter or the youngest son or daughter, although it was not always possible to determine whether a subject was the oldest or youngest child. The birth orders of what must have been middle children were almost impossible to place With these qualifications, the results for eighteen-century Scotland tend to verify those found by modern researchers. A total of 109 individuals were the oldest, the oldest son, or the oldest daughter, or approximately 50 percent of those about whom we could gain information. Conversely, forty-eight were the youngest child, the youngest son, or the youngest daughter, or nearly 25 percent of those for whom information was available. The rest of the achievers must be classed as middle children of one sort or another.

Birth order is obviously more important in large families than in smaller ones, since the middle child in a family of twelve is much more likely to be overlooked than in a family of three. In spite of the difficulties of source materials, it was possible to find the family size for some 169 individuals (45 percent) of the sample. Twenty-four (6 percent) were only

children, and another sixty-four (17 percent) had only one or two siblings. On the other hand, twelve individuals (3 percent) had eleven or twelve siblings, and eight (2 percent) had thirteen or more. The median number of siblings in the entire sample was three or four.

AGE AND ACHIEVEMENT

One of the surprising findings about the individual achievers was their age at death. It would seem obvious that one of the basic requirements for attaining eminence would be to live into adulthood, but it was not anticipated that so many in the sample would live so long. The earliest age at death was twenty-four, for a poet. The longest lived was 112 at death. The median age at death of the achievers in the sample was in the seventy to seventy-nine age group, although is is much closer to seventy than to seventy-nine. See table 1 for the distribution of the age at death of the achievers. This is quite different from the population median of Scotland at that time. In the 1755 census compiled by Alexander Webster (Kyd 1952), the median age of the total Scottish population was in the decade twenty-one to thirty and was fairly close to twenty-five. Even by the end of the century, the life expectancy of a five-year-old child can be estimated to have been under fifty years (Bullough et al. 1970). Table 1 shows the age at death of the 365 achievers on whom information was available compared with the age distribution of the total population in 1755.

OCCUPATION

Many of the individuals included in the study are regarded as major innovators in their fields—James Hutton in geology, John McAdam in

TABLE 1

AGES AT DEATH OF ACHIEVERS COMPARED WITH THE AGE DISTRIBUTION OF THE POPULATION OF SCOTLAND IN 1755

ACHIEVERS' AGES AT DEATH			POPULATION DISTRIBUTION		
Age Range*	Number	Percentage	Age Range*	Number	Percentage
Under 30	3	1	30 and under	768,922	61
30–39	8	2	31–40	175,202	14
40–49	29	8	41–50	134,701	11
50–59	46	13	51–60	94,840	7
60–69	93	25	61–70	58,911	5
70–79	107	29	71–80	25,659	2
80–89	69	19	81–90	6,495	...
90 and over	10	3	91 and over	587	...
Total	365	100	Total	1,265,380	100

* Exactly comparable age ranges were not available.

road building, Andrew Bell in education, David Hume in philosophy, Adam Smith in economics, and others. Even considering the fact that eighteenth-century Scotland witnessed radical changes in society and the beginnings of many new occupational areas, it would seem that individuals entering new or emerging fields would be personalities willing to break with the past and perhaps more likely to achieve eminence. In Scotland at that time, it was the norm for a son to follow the same occupation as his father. In fact, in such cities as Glasgow, with a more or less closed-guild system, it was economically advantageous to do so, since only sons or sons-in-law of the guild masters could gain membership in the guild. In the rural areas there was even less choice of occupation, since the overwhelming majority of the population earned their living by farming.

The nature of the surviving source materials prevented us from identifying the occupation of the father of forty-four individuals (12 percent) in the study, but among those whose fathers could be classified, the majority did not follow in the footsteps of their fathers. Some 225 individuals (60 percent) were in occupational groupings different from their fathers', which, in the light of the time, seems an exceptionally significant ratio. Moreover, those who did follow their fathers' occupation were usually in such fields as university teaching, law, medicine, and the ministry. It is not at all clear, however, whether the occupational change is due to the growing urbanization of Scotland and the rapid growth of towns or whether eminence in any age comes in part from the opportunity to enter a newly developing field. It might well be that the eminent achiever is less conservative than his contemporaries in venturing into a new field

By far the largest number of eminent men in the sample were physicians or surgeons. Fifty-one (15 percent) were physicians and eight (2 percent) surgeons, or a total of fifty-nine; medicine was a field in which the eighteenth-century Scots took European leadership.

As indicated in table 2, however, occupations did not necessarily correlate with the area or specialty in which the individuals achieved eminence. Only fourteen of the thirty-five ministers, for example, achieved eminence in the field of religion, and sixteen of the thirty-four lawyers made their reputations in law. The discrepancy is greatest in the case of university professors, where only six are remembered for their contributions to education. The total numbers and percentages of those who achieved fame and the various fields in which they made their reputations are cross-tabulated in table 2 with the occupations of the achievers.

MARRIAGE, FAMILY, AND WOMEN

Somewhat surprisingly, a total of forty-eight (13 percent) of those included in the study never married. Since, in 1801, the first year for which

Occupation	Medicine and Science	Law	Religion	Politics and Military	Letters and Education	Engineering and Technology	Architecture and Arts (Poetry, Drama, and Painting)	Business and Economics	Others and Overlapping Categories	Total	Percentage
Physicians and surgeons	43	1	. .	. .	4	1	1	. . .	9	59	16
University professors	19	4	7	. . .	20	. . .	. . .	1	6	57	15
Ministers	1	. . .	14	. . .	5	. . .	1	. .	14	35	9
Lawyers, advocates, and judges	1	16	. . .	6	4	. . .	. . .	1	6	34	9
Teachers (nonuniversity)	1	. . .	. . .	. . .	12	1	2	. . .	3	19	5
Engineers, mechanics, millwrights, and metalworkers	. . .	. . .	. . .	1	. . .	14	1	. . .	2	18	5
Artists, painters, and engravers	. . .	. .	. . .	. . .	2	. .	15	. . .	. . .	17	5
Publishers, printers, booksellers, and editors	. . .	. . .	. . .	. .	10	. . .	4	2	1	17	5
Classical scholars, historians, and antiquarians	. .	. .	1	. . .	10	. .	. . .	. . .	3	14	4
Poets and dramatists	. . .	. . .	. . .	. . .	1	. .	11	. . .	2	14	4
Novelists, biographers, and writers	2	. . .	1	. .	8	. . .	. . .	. . .	2	13	3
Military officials	1	. . .	. . .	2	. . .	3	. . .	. . .	5	11	3
Physicists, chemists, geologists, mineralogists, hydrographers, mathematicians, and astronomers	6	. . .	. . .	. . .	1	1	. . .	1	2	11	3
Politicians, civil servants, and officials	. . .	. . .	. . .	6	2	. . .	. . .	1	1	10	3
Merchants, grocers, tradesmen, etc.	. . .	1	. . .	1	3	. . .	. . .	1	2	8	2
Bankers and businessmen	1	. . .	. . .	1	1	1	. . .	1	2	7	2
Botanists, arboriculturists, and naturalists	5	. . .	. . .	. .	. .	. . .	. . .	. . .	1	6	2
All others (each less than 2 percent)	. . .	1	. . .	. . .	5	. . .	11	. . .	8	25	7
Total	80	23	23	17	88	20	46	8	70	375	104
Percentage	21	6	6	5	23	5	12	2	20	100	. . .

accurate statistics are available, there was a ratio of 117.6 females to 100 males (in part because of migration), bachelor status was not due to any lack of marriage mates (Kyd 1952). Moreover, sixty-two (17 percent) of the sample had two or more wives, some indication of the higher mortality rate for women. Once married, the achievers tended to have fewer children than their parents, with a median of two to three instead of four to five. Still, thirty-three (9 percent) had ten or more children. The children of the eminent achievers tended not to reach the levels their parents did. Only thirty-two (9 percent) had children who were or could have been included in the study (if the time period had been extended), although seventy-four (20 percent) had children who achieved enough importance in their own right to be included in the *Dictionary of National Biography*.

Women in eighteenth-century Scotland had great difficulty in asserting themselves in any serious intellectual pursuit. The whole educational system was designed for the male, and almost all the learned professions denied admission to women. In the light of these conditions, it would seem remarkable that eleven (3 percent) of the sample were women. The majority of these were of high-social-class origin, and only three were from the middle or lower middle class. Most of them were educated at home by a private tutor, and they were most likely to achieve eminence in the literary field. The chief exception was Mary Fairfax Somerville, who was a scientist of some reputation although even she acquired part of her reputation on the basis of translations she did from French. She was the only woman in our study who in any sense competed in a male world.

EDUCATIONAL BACKGROUND

The key to much of the study was the hypothesis that education in itself was important in explaining achievement. In terms of the individual achievers, this hypothesis was verified. Only nine persons, three of whom were women, lacked formal schooling, although it was not possible to state with any degree of certainty just what kind of elementary schooling another 105 (28 percent) had. Forty-six individuals (13 percent) were educated privately, by their parents, by a tutor, or through some other such arrangement. The rest had some kind of formal elementary education either in a parish school or in a town grammar school.

The significance of education becomes even more apparent when the length of formal schooling is considered. A very high proportion of the sample turned out to be university graduates or to have attended the university for part of their training. It was possible to identify the educational level of 326 persons in the sample; of these, 76 percent (248) had

some university education and 39 percent (127) had graduated from the university.

In examining university education in somewhat more detail, it seems apparent that university training was more important in achieving eminence for those born in the lower middle and lower classes than for those born in the upper or "elite" group. This is indicated in table 3. In effect, the general trend in the eighteenth century was the same as in the mid-twentieth: upper-middle-class parents tended to send their children to the university, and from this background the greatest number of eminent achievers came. Some members of the lower and lower middle classes also attended the university, but the number who completed their education was proportionately not as high as in the upper middle class. One of the reasons they did not complete their university training was because a special graduation fee was imposed and large numbers of students who were eligible for the degree never paid the fee necessary to graduate.

It should undoubtedly be emphasized that the very nature of intellectual achievement as defined in this study put emphasis upon university training. Still, in terms of general categories, eminence in several fields was not necessarily dependent upon university training. Seventy-three percent of those in medicine and science were university graduates, and an additional 17 percent had some university training. In law, 95 percent of those achieving eminence in the field attended university, although only 11 percent are definitely known to be university graduates. In religion, 95 percent of those achieving eminence attended university, although only 62 percent are known to have actually graduated. Even in letters, 87 percent of those classified as eminent attended the university, while 43 percent of the engineers and inventors did so. In this last case, those who had attended only elementary school outnumbered the university-trained people. This is also true in arts and business. In fact, in the field of fine arts, 10 percent had no schooling whatsoever.

TABLE 3

SOCIAL CLASS OF PARENTS COMPARED WITH ACHIEVER'S LENGTH OF SCHOOLING ($N = 302$)

Achiever's Length of Schooling	Social Class of Parents: Upper	Upper Middle	Lower Middle	Lower
None	3 (13)	1 (1)	3 (4)	2 (2)
Some	4 (17)	30 (18)	23 (35)	10 (35)
Some university	12 (52)	64 (38)	20 (30)	6 (21)
University graduate	4 (17)	75 (44)	20 (30)	11 (38)
Total	23 (99)	170 (101)	66 (99)	29 (101)

NOTE.—Percentages are given in parentheses; $\chi^2 = 29.89$ with 9 df, $P < .001$; and Pearson's contingency coefficient $< .3001$.

SUMMARY

An overall profile of the Scottish achiever of the eighteenth century would indicate that he was born in an urban parish. His parents belonged to the Church of Scotland, lived in the midlands (the section centered around Glasgow and Edinburgh), and could be classified as upper middle class. The subject had three or four siblings, but he himself was probably the oldest. He attended the local parish school and from there went on to the university. As an adult he married, had two or three children, became a part of the upper middle class if he had not been born into it, and lived to be approximately three score and ten years of age. In sum, the eighteenth century Scottish achiever seems to resemble his twentieth-century counterpart in many ways.

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Jewish Student Attitudes toward Interreligious and Intra-Jewish Marriage

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A classification of Jewish university students into Reform and Conservative showed a marked difference in their attitudes toward interfaith and intra-Jewish marriage. Reform Jews were more willing to make interfaith marriages than were Conservative Jews. Students of both branches were more reluctant to marry Catholics than Protestants, and both were more willing to marry persons of no faith than either Catholics or Protestants. In intra-Jewish marriages, attitudes showed that Reform Jews were more willing to marry Conservative than Orthodox Jews, whereas Conservative Jews were more willing to marry Orthodox than Reform Jews. Interpretations are suggested.

Most studies of interreligious marriage in the United States are limited to three broad categories—Catholic, Protestant, and Jewish—with only an occasional breakthrough to take account of finer classifications within these religions. Greeley (1970) offers a breakdown for certain Protestant denominations which supports the position that the United States is a denominational society so far as Protestantism is concerned: marriages tend to be intradenominational as well as intrareligious within the broader categories. In common with most other studies, Greeley's does not distinguish among the three branches of Judaism: Orthodox, Conservative, and Reform. Data on Judaism reported here are not comparable with Greeley's Protestant data, since they are based on premarital attitudes. Nevertheless, they support the general concept of Greeley's article, the need for finer religious divisions to further understanding of intermarriage.

The data come from a questionnaire study made in the spring of 1966 of attitudes of undergraduate university students toward dating and marrying members of specific other religions. Questionnaires were secured from Jewish students by mailing them to all Jewish students enrolled in a large middle-west state university,[1] supplemented by questionnaires from Jewish students enrolled in selected courses in a nearby private urban university. A 60 percent response was secured from the mailed question-

[1] The state university does not record religion of students but gives students cards at registration on which to state their religion for the benefit of religions with campus programs. The names and addresses of Jewish students were secured from the campus Hillel counselor.

naires. The students identified themselves as Orthodox, Conservative, or Reform. Unfortunately, not enough responses were secured from Orthodox students to discover their attitudes. The affiliation of the 40 percent of the students who did not return the questionnaire is unknown. Since the questionnaires were returned anonymously, follow-up was not feasible.

This article makes three approaches to the need for specificity in studies of interreligious marriage based on data from the questionnaire study. It presents differences in attitudes of the Reform and Conservative Jewish students to marrying out of their faith, marrying into specific other religions, and marrying into another branch of Judaism. Differences between male and female attitudes are also noted.

According to the study, attitudes toward marrying into another faith differ between the Reform and Conservative Jewish students. Table 1 shows the greater willingness of Reform than of Conservative Jewish students to marry into another faith than their own. It also shows that male students in each branch are more willing than females to make an interfaith marriage. This simple table demonstrates the need in any study of Jewish interreligious marriage to distinguish both between subgroups and between males and females.

With regard to students willing to marry out of their faith, consideration should be given to the religion into which they are willing to marry, since marrying out of one's religion is also marrying into another religion or into a nonreligious population. The data on attitudes toward interreligious marriage were drawn from a Dating-Marriage Scale, resembling a social distance scale, whose six categories are indicated by the headings in table 2. The categories run from complete rejection of marriage into a specific religion to willingness to become converted to that religion to make marriage possible.

TABLE 1

ATTITUDES OF REFORM AND CONSERVATIVE JEWISH STUDENTS TOWARD MARRYING OUT OF THEIR FAITH

Branch of Judaism	Would Not Marry Out (%)	Total N
Reform:		
Male	42.9	84
Female	51.4	107
Conservative:		
Male	60.8	102
Female	79.1	110

Table 2 introduces three variables: the branch of Judaism, specific other religions, and sex. For this sample of students, several generalizations and possible explanations follow.

Table 2 makes possible a comparison of differences of attitudes between Reform and Conservative Jews, male and female, toward dating and marrying Catholics, Protestants, and those of no faith. An inspection of the column headed "Total of Cols. 1, 2, 3: Endogamy" shows the general pattern of attitudes. Conservative Jewish students, both male and female, were more adverse to marrying into any of the three groups than were Reform students. In making the comparison, lines 1 and 2 should be compared with lines 7 and 8, lines 3 and 4 with lines 9 and 10, and lines 5 and 6 with lines 11 and 12. The differences are not all equally significant, however, as measured by the Kolmogorov-Smirnov two-tailed test of statistical significance. For male Reform and Conservative Jews, the difference between their attitudes toward marrying Protestants is significant at the .05 level, toward Catholics at the .01 level, and toward those of no faith at the .05 level. For female Reform and Conservative Jews, the difference in their attitudes toward marrying Protestants is significant only at the .10 level; toward marrying Catholics and those of no faith the statistical significance does not attain the .10 level. In other words, Reform and Conservative males are more discriminating in their attitudes than are females.

Table 2 also indicates that both Reform and Conservative students have much less aversion to marrying persons of no faith than toward marrying either Protestants or Catholics. One might speculate whether the person without a declared faith seems less of an obstacle to rearing children as Jews than a person who acknowledges affiliation with Catholicism or Protestantism and who might wish to rear the children in his faith.

Table 3 goes a step further in precision of intermarriage relationships; it shows the percentage of Reform and Conservative Jews, male and female, who would consider marrying into other branches of Judaism. The mode for each distribution is at the point of making no requirements for marriage into either of the other two branches. In each case this mode is under 50 percent. The significance of the table lies in the comparison of students who would make conversion or rearing of children a requirement for marriage and those who would themselves convert to another branch of Judaism to make marriage possible. Reform Jews feel closer to Conservative than to Orthodox Jews, as shown by greater willingness to convert to Conservative Judaism. Conservative Jews, the middle one of the three branches, feel a closer alliance to Orthodox than to Reform Jews, as indicated by the greater willingness of males to marry Orthodox than Reform Jews without making requirements and of females to con-

TABLE 2

ATTITUDES OF JEWISH UNIVERSITY STUDENTS TOWARD MARRIAGE WITH CATHOLIC AND PROTESTANTS AND PERSONS OF NO FAITH (%)*

Branch of Judaism	Attitudes toward (1)	Not Date (2)	Date, Not Marry (3)	Marry If Mate Converts (4)	Total of Cols. 2, 3, 4: Endogamy (5)	Marry If Rear Children as Jews (6)	No Require-ments (7)	Jew Would Convert (8)	Total N (9)
Reform:									
1. Male	Protestant	0	15	30	(45)	41	13	1	83
2. Female	Protestant	5	19	26	(50)	35	13	2	105
Reform:									
3. Male	Catholic	2	18	33	(53)	42	6	0	82
4. Female	Catholic	8	23	27	(58)	29	13	0	105
Reform:									
5. Male	No faith	2	10	20	(32)	54	13	1	83
6. Female	No faith	3	10	22	(35)	54	8	4	104
Conservative:									
7. Male	Protestant	5	19	42	(66)	23	11	0	102
8. Female	Protestant	12	19	36	(67)	27	4	2	109
Conservative:									
9. Male	Catholic	6	18	52	(76)	17	7	0	101
10. Female	Catholic	15	21	36	(72)	24	4	0	108
Conservative:									
11. Male	No faith	8	11	34	(53)	36	10	1	101
12. Female	No faith	10	11	24	(45)	51	4	0	108

* The level of significance of differences was tested by the Kolmogorov-Smirnov two-tailed test. The difference in attitudes toward Protestants between Reform and Conservative Jewish students is significant at the .05 level for males but only at the .10 level for females. The difference in attitudes toward Catholics between Reform and Conservative Jewish students is significant at the .01 level for males; for females the difference is not significant even at the .10 level. The difference in attitudes toward persons of no faith between Reform and Conservative Jewish students is significant at the .05 level for males but is not significant for females even at the .10 level.

TABLE 3

ATTITUDES OF REFORM AND CONSERVATIVE JEWISH STUDENTS TOWARD INTRA-JEWISH DATING AND MARRIAGE (%)*

Branch of Judaism	Attitudes toward	Not Date	Date, Not Marry	Marry If Mate Converts	Marry If Rear Children In "My" Branch	No Requirements	Respondent Would Convert to Another Branch	Total N†
Reform:								
Male	Orthodox	2	2	9	35	45	7	81
Female	Orthodox	1	7	5	16	49	23	103
Reform:								
Male	Conservative	1	...	2	25	47	25	77
Female	Conservative	..	1	1	6	47	45	102
Conservative:								
Male	Orthodox	1	4	13	19	46	16	94
Female	Orthodox	1	7	6	10	39	37	104
Conservative:								
Male	Reform	...	1	16	33	35	15	94
Female	Reform	...	..	6	27	40	27	101

* The Kolmogorov-Smirnov two-tailed test was used to evaluate the differences between attitudes. The difference in attitudes of Reform Jewish male students toward Orthodox and Conservative Jews was barely significant at the .10 level; for females the difference was significant at the .01 level. Among Conservative students the difference in attitudes toward Orthodox and Reform Jews was not significant for either males or females.

† The totals are less than in tables 1 and 2 because of failure of some students to reply to the question.

vert to Orthodoxy. In all combinations, females are more adaptable to intra-Jewish marriage as shown by their greater willingness to convert.

Suggestions are sometimes made among Jews that the three branches should merge. The disparity of willingness to intermarry between the two branches (one may surmise the three) creates doubt about the feasibility of merging, since 2–18 percent of students would not marry into another branch or would require conversion to their branch to make marriage possible, and an added 6–35 percent would require rearing of children in their own branch of Judaism.

Some questions may be raised whether the differences shown in this study are based on religious differences or whether they may be due to differences in social class, urban-rural backgrounds, or the generational level of the Reform and Conservative students. It is true that these three variables influence marriage attitudes and later choice of mate. However, the samples of Reform and Conservative students in this study were very similar with respect to these variables.

Both Reform and Conservative students were essentially urban dwellers, from one metropolitan area. Only 5 percent of the Reform and 3 percent of the Conservative students resided in cities of less than 10,000, and 25 percent of each group lived in cities of 10,000 to one million, with 69 percent and 72 percent in cities of a million or over.

In educational status, the fathers of male Reform students ranked slightly higher than the fathers of Conservative students: 41 percent and 47 percent, respectively, had no more than high school education; 31 percent and 40 percent had some college education or were graduated; and 27 percent and 13 percent had some graduate work up to and including the doctor's degree. These levels of education placed both groups of students in the range of the middle class. Female students came from the same background.

The male students were upwardly mobile. Their educational aspirations outranked the achieved educational level of their fathers: 30 percent of Reform and 25 percent of Conservative students aspired to college graduation; 37 percent and 47 percent planned for graduate work, usually for a master's degree; 33 percent and 27 percent would go beyond the master's degree, with the majority aiming for a doctor's degree. The students were definitely upwardly mobile, the Reform Jews slightly more so than the Conservative.

The generational level of the students with reference to the time their ancestors entered the United States might be expected to influence attitudes toward intermarriage. For the country as a whole, Reform Jews represent an earlier entrance into the United States than Conservative Jews; therefore Reform students might be expected to have a longer family history of acculturation to American culture than the Conservative

Jews. Answers to the query "On your father's side, which was the first generation to come to the United States?" yielded the following responses: the student was foreign born in 2 percent of both Reform and Conservative groups; the father was the original entrant for 15 percent of Reform and 14 percent of Conservative students; grandfather for 60 percent and 72 percent; and great grandfather or earlier, 24 percent and 13 percent. The great majority in both branches were at least second generation in the United States.

Each of the above background findings may contribute to the difference in attitudes toward intermarriage between Reform and Conservative Jews, presumably toward greater secularity of attitudes among Reform students. However, general discussions of Reform and Conservative Jews suggest other influences not covered in the questionnaire (Blau 1966; Sklare 1955): the greater tendency of Conservative Jews to live in Jewish neighborhoods with more opportunity for the formation of Jewish friendships among children; their continued allegiance to the traditional Jewish values and rules, among them strict endogamy; and more intensive socialization of children into these values.

The differences between Reform and Conservative Jews could be expanded in two directions: toward more liberality of attitudes toward intermarriage among secular Jews (Goldstein and Goldscheider 1968, p. 164), and toward more avoidance of intermarriage among Orthodox Jews. Unfortunately, the present study did not yield students in these categories. The two branches included, however, demonstrate the need for a finer classification of Jews into subgroups for an understanding of intermarriage.

These findings and speculations are somewhat in contrast to Greeley's (1970) tentative speculations that denominationalism in marriage "is rooted in the American belief that religious differences between husband and wife are not good for the marriage relationship or for the children of the marriage . . . reinforced by the fact that it is simpler and more convenient for everyone in the family to belong to the same denomination." His example for the latter is that "one need not worry about two sets of contributions to the support of one's church."

COMMENTS

The material here presented has limitations. It is not based on a completely random sample of Jewish students at the two universities, the numbers are small; Orthodox Jews are not included; and there is no assurance that the attitudes during undergraduate years are indicative of later marriage. Nevertheless, in view of the scarcity of data on the three branches of Judaism, this report indicates that definite differences regard-

ing interfaith and intra-Jewish marriages exist and merit further study. The data also give support to Greeley's contention that America is still very much a denominational society.

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Some Like It Hot: Social Participation and Environmental Use as Functions of the Season[1]

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Utilizing data from a sample of housewives in metropolitan Toronto who were interviewed both in February and in June of the same year, this paper brings out the existence of seasonal volatility both in organizational participation and in interpersonal relations, a situation accorded little attention in the sociological literature. The pattern of shifts in personal interaction indicates greater elasticity according to season in northern climates in use of macroscopic environment, as compared to immediate environment, and some grounds for devoting greater attention to planning for winter conditions in the immediate environment.

The explanation and clarification of sociological phenomena have been assisted by the treatment of space as a variable—as a determinant of various types of behavior (e.g., Whyte 1963, chap. 25), as a factor limiting but not determining components of traditional action systems (e.g., Michelson 1970*b*), and as a medium, the use of which reflects and demonstrates established cultural patterns (e.g., Sommer 1969). Space has been defined at three levels: (1) proximate environment—within buildings and rooms (e.g., Hall 1966; Sommer 1969); (2) macro-environment—beyond the residential area outward to the city as a whole (e.g., Bell 1958; Abu-Lughod 1960; Michelson 1967); (3) immediate environment—roughly the area abutting the residence within about a block (e.g., Festinger et al 1950; Caplow and Forman 1950; Kuper 1953; Merton 1948; Whyte 1963, pp. 381–82).[2]

In this paper, attention will focus on levels of environment, not on the

[1] The work reported here was conducted under a research contract given by the Central Mortgage and Housing Corporation (Canada) to the Centre for Urban and Community Studies of the University of Toronto. I am indebted to the principal investigator, A. J. Diamond, architect, for his interest in the sociological substudy. Much of the responsibility for the study methodology goes to the twenty-two students enrolled in 1967–68 in my graduate seminar in urban sociology; the analysis presented here, however, is my sole responsibility. I am grateful to Joanne Hershoran, Paul Reed, Janet Lytle, Carole Cox, Geoffrey Cooke, Olusola Avoseh, William Babachuck, and particularly Jonathan Caulfield for their assistance at various stages of the project. Interviewing services by RECON Research Consultants Ltd. are gratefully acknowledged, as is the cooperative assistance of Brian Forrest. Helpful comments on earlier drafts were offered by Charles Tilly, Barry Wellman, Joseph Lennards, Rainer Baum, Harry Nishio, Trudi Bunting, John Hitchcock, and Rex Lucas, as well as by *AJS* editors. An earlier draft of this paper was presented to the 1969 Annual Meeting of the American Sociological Association, San Francisco, California.

[2] The term "neighborhood" implies an elastic concept with unpredictable subjective contents. For some it means immediate environment, for others something much

relationships within any particular level. The findings reported are serendipitous in that the study from which they resulted was designed primarily to assess hypotheses about the immediate environment but produced data which shed unexpected light on the relationship between this and macro-environment.

The research was commissioned by an architect who sought sociological data as a design input. Since a vital aspect of home environment is outside space (cf. Fried and Gleicher 1961; Hartman 1963; Michelson 1966), and since its social utilization varies greatly in northern climates according to the time of year, the study design was sensitive to seasonal factors. The architect who plans for an unchanging social situation ignores reality, although our impression was that, except in the most extreme climates, the public chooses housing on the basis of summer conditions, despite the small percentage of the yearly weather that it represents. We therefore gathered similar data at two different times of year.

Sociological literature provides virtually no clue as to seasonal shifts in patterns of interaction or participation, or in the relationship of such shifts to physical setting. Although authors frequently compare rates of participation between places, classes, and so on, they rarely state at what time of the year their interviews were conducted, or consider what effect this might have. The closest we have seen sociologists come to this question are (1) that certain activities take place at ritual occasions written into the calendar (Klapp 1959), and (2) that school vacations influence the activities of children (Lundberg et al. 1934, chap. 4). These are questions quite apart from the influence of regularly shifting weather conditions customary in northern climates.

This paper will focus on seasonal differences as a possible intervening variable with respect to social participation and primary interaction (both highly conventional sociological variables), differences which will shed light on the nature and relevance of macro-environment. Results stemming from the primary intent of this study are reported elsewhere (Michelson 1970*a*).

RESEARCH DESIGN

A sample of 173 married women with children living at home in metropolitan Toronto was interviewed originally at the end of February 1968, which included the coldest week of the winter; reinterviews were held during the last week of June that year, warm summer weather occurring mostly before the mass exodus to vacation areas. The first interviews

broader; for others a social, not spatial, phenomenon; and for still others it does not exist at all (cf. Keller 1968; Lee 1968). The term "neighborhood" is used eclectically in this paper as synonymous with the immediate environment simply because we used the word in order to "communicate" with respondents; despite its imprecision, it does connote an area far different from the other levels mentioned.

were conducted by graduate students, the second by professional interviewers.

This sample was stratified according to residential area, which built into the study workable categories of residential environment. The four areas—all at suburban locations considerably removed from the city center—varied in several ways: housing type (single family, town house, maisonette);[3] access to open space (private, public); access to community facilities such as stores and schools (immediately at hand, driving distance away); and tenure (owner, renter). While related, these distinctions did not coincide exactly in the areas chosen for study.

Although varying in these several ways, the sample was planned to be relatively homogeneous in SES and family composition by selecting housing units of approximately equal monthly cost (about $180–$220 a month), inside space (large apartments, small homes) and number of bedrooms (three and four). Data on occupation of head of household and income confirmed this intention. Only 2 percent of the families had incomes under $5,000 a year, and only 16 percent earned over $10,000. Although nearly 80 percent of the husbands had completed a college preparatory course, only 17 percent had a B.A. or higher degree. In over 80 percent of the cases, the number of children was between two and four; 74 percent of the children were between the ages of one and twelve. Furthermore, in accordance with the architect's wishes, sampling was from predominantly WASP areas.[4]

The June follow-up resulted in 130 completed interviews. Virtually all attrition was a consequence of subsequent moves or absence from home during the ten-day period allocated for the second phase of interviews, refusals were minimal. Comparisons of winter with summer activity are based only on those who were interviewed twice.

HYPOTHESES

Our expectations relevant for the present discussion involved three questions: (1) What kinds of activity and interaction characterize these people? (2) How does this vary by season? (3) What does this say about levels of environment?

[3] In the local jargon, a town house is a low-rise multiple dwelling whose occupant's entrance is directly to and from the outdoors; the maisonette is a one- or two-story multiple dwelling where access to the dwelling units is from a central hallway.

[4] Once an address was selected (randomly within a given area), an alternate was chosen in case a household did not have children living in the home. Preselected alternate households were also substituted for vacant homes or refusals. The number of alternates was limited by the supply within strata, and the total of 173 households represented 75 percent of the original sampling frame. It does not, however, represent a bias in the various selection criteria.

In order to understand fully behavioral changes from season to season, there must be a basic behavioral pattern to consider. Studies have graphically demonstrated that the occupants of different areas of cities exhibit markedly different activity patterns and interpersonal relations. These variations, which reflect differential weighting of roles, each of which has activity and interaction components, are often called "life-styles."

Therefore, as a first step in assessing the "behavior baseline" of the present sample, we had specific expectations about the life-styles of mid-suburban families. On the basis of a wide variety of studies taking into consideration SES, housing location, and family composition (cf. Bell 1958, 1968; Young and Willmott 1957; Bott 1957), we hypothesized that the families' daily lives would strongly reflect nuclear family pursuits relatively close to home and would weakly reflect commercialized recreation or cultural activities. This would be consistent with Bell's hypothesis of suburban "familism" as opposed to center-city "consumership" or "careerism" (Bell 1958).

Second, we hypothesized specific shifts in social interaction from winter to summer as follows:

a) Contact among propinquitous friends and relatives will increase in summer since informal, outdoor exposure among neighbors will increase with warm weather. In colder weather, spontaneous interaction declines in favor of more formal, planned contacts.

b) In warm summer weather, people will increase their contact with friends at the relative expense of contact with kin, given the elastic, voluntaristic nature of friendship ties. This expectation is based on the premise that "blood is thicker than water," or that cold weather inhibits contact less among relatives than among friends.

c) As a corollary of (*a*) it was expected that the distance between those whose relationship includes mutual aid will decrease in the summer.

d) Use of the neighborhood will increase in summer, also due to the increased spontaneity warm weather encourages.

Implied by these hypotheses is a more general one that warmer weather not only induces greater contact among people sharing the immediate environment but also that this *level* of setting for contact is more significant relative to the macro-environment in people's lives during summer than during winter.

FINDINGS

A. Life-Style

As an indication of the life-style broadly characterizing this sample, table 1 shows the percentage of respondents reporting at least minimal

TABLE 1

MINIMAL PARTICIPATION IN SELECTED ACTIVITIES (IN %)

Activity	% Participating in Activity	Total Codable Responses*
Complete participation:		
Shop for sundries	100	114
Shop for groceries	100	116
Watch television	100	130
Pleasure reading	100	128
Telephoning	100	130
Majority participation:		
Shop for clothes	97	101
Sew or knit	87	130
Attend parties or suppers in the home	68	127
About 50 percent participation:		
Attend church or synagogue	53	128
Sports (attendance or participation)	52	127
Eat in restaurants	48	126
Low participation:		
Employment	42	130
Attend associations or meetings	38	125
Attend movies	29	125
Take educational courses	23	129
Arts and crafts	21	130
Play musical instruments or sing	12	130
Attend plays or concerts	12	126

* The total number of respondents was 130, but the number of codable responses varied per question

participation in each of a number of activities. In this case minimal participation is defined as "at least several times a year or more" for nonintense activities and at least an hour in a typical week for intense activities. Minimal participation had to be reported in only one of the two interviews to be considered here.

The data strongly support our expectations that this is a home-based, "familistic" sample, particularly in comparison with previous studies (cf Tomeh 1964; Greer 1956; White 1955; Reissman 1954). Greatest participation in a discretionary activity is in parties or suppers in the home; a large proportion of this sample does so frequently. Attendance at such discretionary activities as formal associations, movies, educational courses, and cultural presentations is relatively low.

B. Seasonal Variation

1. Participation in selected activities was analyzed in categories centering around the following midpoints (for nonintense activities): (*a*) once a week or more, (*b*) once a month, (*c*) once a year or less. The last category was regarded as containing people inactive with respect to a

given activity. Similar categories based on hours per week were made for intense activities. Shifts in participation were deemed as having occurred if a person moved from one category to another. Table 2 indicates the extent of increased or decreased participation from winter to summer among those participating at any time in the activities listed in table 1.

The amount of change is considerable and highly dependent on the nature of the activity concerned; this cannot be dismissed as a reflection only of potentially low reliability from one interview to the next. The least amount of change occurs with respect to activities which are either nondiscretionary or in which few respondents participate, and the greatest is among activities which are clearly discretionary.

In general, more activities suffer net decreases in participation from winter to summer than the reverse. The single greatest decrease among these women is in employment, with almost five times as many lightening this load as adding to it. This is not, however, accompanied by a general increase in the pastime activities inventoried here.

TABLE 2

NET SHIFTS IN FREQUENCY OF PARTICIPATION IN SELECTED ACTIVITIES AMONG AT LEAST MINIMAL PARTICIPANTS FROM FEBRUARY TO JUNE 1968 (IN %)

Activity	Increased Participation	Decreased Participation	Net Shift	N*
Increased participation from winter to summer:				
Sports (attendance or participation)	52 %	24 %	+28%	66
Attend church or synagogue	28	12	+16	68
Pleasure reading	35	22	+13	128
Decreased participation from winter to summer:				
Employment	11	52	−41	54
Arts and crafts	30	59	−29	27
Take educational courses	31	52	−21	29
Attend associations or meetings	23	41	−18	47
Telephoning	17	32	−15	130
No marked change from winter to summer:				
Shop for sundries	3.5	3.5	0	114
Attend movies	30.5	30.5	0	36
Shop for clothes	24	23	+ 1	98
Shop for groceries	6	8	− 2	116
Attend parties or suppers in the home	26	29	− 3	86
Eat at restaurants	30	34	− 4	61
Attend plays or concerts	33	40	− 7	15
Watch television	23	31	− 8	130
Sew or knit	27	18	+ 9	113
Play musical instruments or sing	27	40	−13	15

* N in this table represents the number of respondents with at least minimal participation in the given activities at one or both interview points.

The greatest single increase in activity in the summer is with sports. This almost undoubtedly involves outdoor participation, since the major form of indoor spectator sport—hockey—in Toronto comes during the colder months.

Decreasing participation is all with respect to indoor activity. This would be consistent with the hypothesis of an increase in activities utilizing the immediate outdoor environment. While an increase in churchgoing does *not* support the hypothesis, its explanation may lie in its semi-obligatory character which may become more pressing in the absence of meetings of other formal organizations or of inclement weather. Pleasure reading may increase in the summer months because it is easily portable to outdoor locations, given the time to do so; however, there is no way of substantiating this from the data gathered.

In any case, the data show that social participation is more seasonally volatile than sociological literature has acknowledged. More light can be shed on behavioral shifts from winter to summer and their connection to levels of environment by investigating our more specific expectations on the frequency of differing types of interpersonal contact.

2. The more specific hypotheses concerning interpersonal contacts are stated in both absolute and relative terms. With respect to the former, our rather simplistic expectation that the immediate environment would be more of a meeting ground in summer than in winter was borne out by the data. Approximately 10 percent more people saw nearby friends or relatives at least once a week (more typically several times a week) in the summer than in the winter. Not surprisingly, 60 percent of the sample met their neighbors outside in the summer, while only 42 percent did so in the winter.

Nonetheless, any such finding of absolute change in a given kind of contact from season to season does not necessarily bear on the question of seasonal changes in the relative *significance* of one or another level of environment to people. For that, one must analyze interrelations among individuals' locational and relational contact patterns simultaneous with seasonal considerations.

Since data on frequency of contact (like that of activities) was precoded according to ordinal categories, and since each type of contact had a different initial set of frequencies based on individual differences in the availability of significant others, concise measurement of change in the relationship of different types of contact to each other over time must be nominal in nature. To test the hypotheses concerning changes in the relative frequency of personal contacts varying by location and by relation, a crude but consistent measure was devised. For each respondent, we asked whether at Time 1 (winter), the frequency or number of any one type of contact (e.g., seeing friends inside the neighborhood) was the

same, greater, or lesser than that of another type (e.g., seeing friends living outside the neighborhood). The dimension of time was then added by assessing whether the initial balance remained or reversed in specified directions when similar data from Time 2 (summer) was introduced. Although qualitative in nature, this measure shows the critical changes in relationship encountered by the individuals in this aggregate from season to season. Results derived from this measure of relative frequencies of contact appear in table 3.

Our hypothesis about the relative decline of contact with kin seems contradicted. As the weather became warmer, the number of people who, within their neighborhoods, saw their relatives as much or more than their friends, when this had not been the case during the winter, rose sharply. More people experienced this trend "toward relatives" than experienced the opposite. This may be a function of the fact that only a small percentage of people had relatives living in the immediate environment and that the initial balance in favor of friends made a net change to the contrary more likely statistically. However, the same relationship occurs when viewing contact with friends and relatives living outside the immediate environment; people who started to see relatives more frequently than friends with the onset of summer were again found more numerous.

Nevertheless, to reflect fully a greater significance of the immediate, outdoor environment in summer, both relatives and friends "inside" should gain in frequency not just absolutely but *at the expense* of their counterparts "outside." But, as table 3 demonstrates, the relative shift of activity was in a more outward direction. More people had the balance of

TABLE 3

CHANGE OF BALANCE IN LOCATION AND TYPE OF PERSONAL CONTACTS, FEBRUARY TO JUNE 1968 (IN %)

	Type of Change			
Location or Type of Dominant Personal Contact	A	B	No Change	N
Frequency visit *friends inside* neighborhood vs. *relatives inside**	12%	19%	68%	130
Frequency visit *friends outside* neighborhood vs. *relatives outside**	19	27	54	130
Frequency visit *relatives inside* neighborhood vs. *relatives outside*†	6	15	78	130
Frequency visit *friends inside* neighborhood vs. *friends outside*†	22	23	55	130
Number of *friends inside* neighborhood vs. number of *friends outside*†	15	23	62	130

* A = change from relatives to friends; B = change from friends to relatives.
† A = change from outside to inside; B = change from inside to outside.

their interpersonal contact changed from inside to outside the immediate environment in the summer, whether friends or relatives were considered.

Although the above findings are with respect to frequency of interaction, similar results would be expected with respect to the number of friends living inside and outside one's neighborhood. If the immediate, outdoor environment is more a part of a person's life in summer than in winter, good weather should be the occasion of a proportionately greater increase in people reporting the balance of their friends living within their immediate environment. Yet again, the opposite was found; more people had the number of their friends change from greater "inside" to greater "outside" in the summer.

In short, all expectations of seasonal shifts in the locational balance of interpersonal contact based on exposure provided by the immediate, outdoor environment were unsupported. Although differences were at times small, the reverse relationship occurred consistently. These unexpected results continue when the notion of function is added to that of frequency and amount of contact.

We expected, for example, that people's use of their own neighborhood would increase in summer, yet the percentage of those who denied using areas in the neighborhood, but outside the house, for any purpose increased from 22 percent to 28 percent from February to June. In addition, as might be expected from the data on interaction, the percentage of people who stated that they used their neighborhood for "visiting neighbors and the like" decreased from 8 percent to 2 percent (N = 124). This is further substantiated by answers to the question, "How many people in this neighborhood do you know and say hello to?" While 62 percent of the respondents (N = 128) cited the same number during both interviews, only 14 percent gave a larger number in June than in February, while 23 percent cited fewer.

Thus although the sheer frequency of local contacts might increase from winter to summer, their relative significance may decrease.

The remaining hypothesis with which we began concerned the distance between a respondent and those relied upon for assistance in emergencies and crucial functions; it was upheld in part. This distance decreased for slightly more people than it increased. Twenty-one percent indicated less distance, 18 percent more distance, and 51 percent no change.

Nonetheless, acceptance of this hypothesis must be tempered by the fact that the distance from a respondent to the person she says she "knows best" in her area increased more frequently than it decreased from February to June (17–13 percent).

That assistance in an emergency alone among all the relationships studied, turns slightly inward during the warmer months can be explained in terms of the neighboring function. As Keller sums up the ex-

isting literature, one of the prime functions of the proximate neighbor is that of supplying such assistance (Keller 1968). Indeed, neighbors typically fear to have their relationship become highly personal lest it turn sour and ruin a valuable mutual aid relationship. Since warmer weather does put neighbors together more frequently in absolute terms, it is not surprising that the distance from a respondent to the person to whom she turns in an emergency would decrease in summer even though average distance traveled to friends, relatives, and others increases at the same time.

While these findings are serendipitous and unsystematic, they report in consistent, although not dramatic, fashion the declining importance of the immediate, outdoor environment for these middle-class, suburban, "familistic" women from winter to summer;[5] and they indicate the increasing importance of more macroscopic levels of environment.

In this perspective, it would appear that the rigors of winter inhibit use not only of immediate environment but even more so that of macro-environment. The permeability of macro-environment appears to improve to a much greater extent in the warmer seasons than does that of the immediate environment. For example, although people may come in contact with their immediate neighbors more easily in summer than in winter, they find that their ability to visit friends across town is improved to an even greater extent. As a result, the latter type of interaction increases more significantly than the former.

Since few of the families in this sample had second cars, the seasonal appeal of public transportation to housewives may be a factor along with the uncertainty of planning family automobile trips in winter weather. But service is available in all these areas, and it is reliable, modern, and

[5] I have not stressed statistical tests in this presentation. Nonetheless, a statistical interpretation may be made of these findings for those wishing to evaluate the data with a standard yardstick despite drawbacks. We can easily ask whether it is possible to reject the null hypothesis that the observed number of changes in the modal direction is not sufficiently greater than the number that would change in that direction, assuming that an equal number changed in each direction. One simply computes a Z-score with N = the number of persons changing in both directions and $p = q = .5$ (see McNemar 1955, pp. 50–52). As one suspects from the simple percentages in table 3, probabilities of differences that great in one direction by chance alone are relatively low but not conclusive: .08, .10, .01, .40, and .08, respectively. My argument, however, is that, though serendipitous and undramatic, they are consistent. Should one wish statistical investigation of this assertion, Fisher's test of the significance of series of tests, which utilizes the exact probability of each, is in order (see Martin 1970, pp. 42–43). In the case of table 3, the overall probability of a trend in the direction found is between .01 and .001 ($\chi^2 = 25.960$; 10 df), rejecting the null hypothesis. This high level of statistical significance is maintained with the inclusion of the complementary data on change stemming from "How many people in this neighborhood do you know and say hello to?" and how far the neighbor lives whom the respondent knows best ($\chi^2 = 35.62$; 14 df). Even when the one opposite trend is included (although it can be soundly explained), the significance of the trend remains unchanged ($\chi^2 = 38.09$; 16 df).

not exorbitant in cost. However, at these suburban locations, service is relatively infrequent, and the waits involved are considered extremely unpleasant in the chill of winter.[6]

What this implies is that the immediate environment plays a more crucial role in the women's lives in winter than in summer. If partly cut off from the larger part of metropolitan surroundings in winter, a woman is forced to a greater extent to find companionship and service in the more immediate area—even though this might still be more difficult in winter than in summer.

This suggests that the popular standards for designing and choosing a local area might be turned 180 degrees but for the warm-weather biases of consumers at the moment of selection. In northern climates, the local neighborhood might well be geared to maximize winter rather than summer use if both uses could not be simultaneously maximized.

It is neither possible nor desirable to generalize to a larger population what these data on white, suburban, middle-class mothers with "familistic" life-styles demonstrate. Nonetheless, the pattern by which our original hypotheses about environment were rejected is highly suggestive of the importance of macro-environment in the lives of those people thought most dependent on immediate environment. Although it is without question premature to herald the onset of "community without propinquity" (Webber 1963)—the notion that close personal relations can exist in cities even though the persons involved are not geographic neighbors—it is clear that the macroscopic level of environment is important for the present sample and that its permeability is related to weather conditions more than that of the immediate environment; both interaction and activity are consequently affected.[7] In any case, the concept of "community without propinquity" is more complex than has been previously suggested.

That these seasonal variations play such a role in human interaction and activity is relevant both for the environmental designer faced with the satisfaction of human needs and for the sociologist who must account for the range of factors which make intelligible his statistics.

[6] Central-city residents may react in dissimilar fashion, since in many cities (Toronto included) public transit service is more frequent and less costly in central areas, and, in any case, more people and services are at hand due to higher densities and greater land-use mixtures. Furthermore, it would appear that people lower in the socioeconomic ladder are more local in their orientations, although sweeping generalizations are unwise.

[7] The stature of "community without propinquity" seems increased if, in fact, blood does not run thicker than water. The data here suggest people maintain their cross-town friendships more assiduously than comparable kin relations during the cold, inconvenient winter months.

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Another Look at the Burgess Hypothesis: Time as an Important Variable

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The concentric circle theory of E. W. Burgess and some contradictory evidence derived from other cross-sectional analyses of the socioeconomic structure of cities is reexamined here with a longitudinal approach to assess the influence of time on the emergence of a pattern of socioeconomic status distribution within cities. The application of a Markov Chain to changes in the socioeconomic characteristics of tracts from 1940 to 1960 suggests a general evolutionary process. Although not evident in cross-sectional analysis, there is a trend toward a direct relationship between socioeconomic status and distance from city center even within cities which show an inverse cross-sectional relationship at present.

The organizational form of the urban community has received much attention over the years from sociologists and human ecologists. The literature abounds with descriptions of the socioeconomic structure of particular cities (Cressey 1938; Duncan, Sabagh, and Van Arsdol 1962) and generalizations concerning the structural consequences of urban growth (Schmid 1958; Duncan and Duncan 1957; Sharp and Schnore 1962). A most widely accepted notion concerns the gradual decentralization of population as urban growth proceeds (Schnore 1957). Coupled with this temporal change in the population form[1] of the urban area is a spatial shift in the socioeconomic structural form of the area, with higher-status people residing in the metropolitan ring and lower-status people living closer to the center of the city (Burgess 1924; Schnore 1963).

The notion that urban communities become socioeconomically stratified into this particular spatial pattern is generally attributed to Burgess (1924), and there has been a considerable amount of research since Burgess's original paper which either supports or refutes his concentric circle theory (Alihan 1938; Davie 1937; Quinn 1940). Burgess illustrated how the city expands by a series of concentric circles, which he numbered to designate both the successive zones of urban extension and the types of areas differentiated in the process. The illustration represented an ideal construction of the tendencies of any town or city to expand radially from its central business district and included five concentric zones: "the loop (I); an area of transition encircling the downtown area (II); a zone

[1] Boulding (1956) makes the useful distinction between population growth, "creation or depletion of a variable," and structural growth, "changes in relations between interrelated parts of the aggregate."

of workingmen's homes who have escaped from the area of deterioration (III); beyond this is the residential zone of high-class apartment buildings and single-family dwelling units (IV); and still farther out beyond the city limits is the commuter's zone (V)" (Burgess 1924).

Critical research has pointed out several shortcomings in the generality of the Burgess theory with respect to describing the socioeconomic structure of an urban community at a particular point in time (Alihan 1938). Quinn (1940) points to the need for considering ecological-time cost rather than linear distance to account for noncircular patterns. Davie (1937) suggests that the zonal pattern is nonexistent in New Haven, Connecticut, noting instead a pattern which includes a number of varied socioeconomic classes in any given circular zone. Schnore (1963), in a comparison of the socioeconomic status of central cities and rings, concludes that older urbanized areas generally conform to the Burgess zonal pattern but that newer[2] cities in the South and West have the opposite configuration, with lower SES population overrepresented in the rings and higher SES populations overrepresented in the central city. Schnore argues that age of city rather than size is the important variable making for this difference, the newer cities having developed under a different regime of technology—different types and quality of housing and the age of the automobile—enabling business and industry to "leap frog" the interior residential zones which in previous times would have turned to low-income slums.

Schnore (1963) goes on to point out that Burgess originally conceived his zonal hypothesis as a growth model which dealt with the *process* of urban structural development and not as a static or cross-sectional representation of urban spatial structure. This well-taken point puts most of the critical analysis of Burgess's theory in a questionable position since, in most cases, the theory is supported or faulted on the basis of a cross-sectional analysis of a particular city or group of cities at a particular point in time, ignoring the crucial idea that cities *tend* to become organized in a particular way over time. That is, the socioeconomic structure of urban areas must be viewed as a process, in constant change, and the trend is the important variable to contend with, not only for the validity of the Burgess theory but for understanding the development of organizational form in the urban community regardless of the form.

The Burgess theory, and the contradictory evidence of Schnore, is reexamined here in a longitudinal analysis to determine if time creates an inverse relationship between socioeconomic status and distance from the city center. The method enables an exploration of the dynamics of structural growth, focusing upon the changing relationship between socioeconomic status distribution relative to the center of the city and the

[2] "Newer" in terms of year when the city first reached 50,000 population.

passing of time. Thus, a reformulation of the Burgess theory, with explicit focus upon the process of structural development, would postulate an increasingly apparent direct relationship between socioeconomic status and distance from the center of the city with the passing of time.

DATA

The selection of cities for analysis was limited to those which were tracted in 1940, 1950, and 1960, with at least twenty tracts in 1940. Selection was limited by the possibility of constructing comparable tract boundaries for the three census years (see U.S. Bureau of the Census 1940, 1950, 1960).[3] It should be noted that "city" in this investigation refers primarily to the areas which were tracted in 1940 and excludes most of the newly tracted areas in 1950 and 1960. However, certain newly tracted areas in 1950 were included in the analysis when their inclusion tended to make the irregular perimeter of the 1940 tracted area more circular in form. Furthermore, the use of a 1940 base does not necessarily imply only the central city, since Dallas, Hartford, and Minneapolis had some suburban area tracted in 1940. Thus the connotation of "city" here refers neither to the politically defined central city nor to the Standard Metropolitan Statistical Area as defined in 1960 but to the area bounded by the furthest outlying tracts in 1940 setting a roughly circular perimeter for the area. A few tracts which were grossly incomparable over time were excluded from some cities.[4]

Three cities shown by Schnore (1963) to have higher socioeconomic status in the central city than the ring satisfied the criterion for inclusion, and five cities with the expected pattern of lower SES in the central city were chosen to represent different parts of the country. The cities selected, along with an indication of whether they exhibited a direct (*D*) or inverse (*I*) relationship between SES and distance from city center, are shown in table 1.

[3] The requirement of comparable areal boundaries for tracts or combined tract units is necessary for a rigorous longitudinal design, so that changes in the SES of tracts over time are not artifacts of boundary alterations. The seemingly studied villainy of local census boards in altering tract boundaries leaves precious few cities that can be analyzed longitudinally over three census years.

[4] The cities of Hartford, Rochester, and Minneapolis-St. Paul are treated as the 1940 tracted area, and no tracts were deleted on the basis of noncomparability. For Milwaukee, fourteen tracts which were defined in 1940 were deleted from analysis because in 1950 these tracts combined the 1940 area with annexed territory. Eight tracts newly defined in 1950 were added since they tended to fill in irregular indentations arising from the 1940 tract delimitations. The area analyzed for Denver is the 1940 tracted area plus two tracts which were newly defined in 1950. For the city of Portland, one 1940 tract was deleted (44) and one tract newly defined in 1950 was added (61). Twenty-eight newly tracted areas were added to the 1940 base for Houston, with no tracts being deleted, and thirty-three tracts were added to the 1940 base for Dallas while nine tracts delimited in 1940 were deleted from analysis.

TABLE 1

SELECTED CITIES BY REGION AND 1960 SES PATTERN

City and Region	SES Pattern*
Northeast:	
Hartford	D
Rochester	D
North-Central:	
Milwaukee	D
Minneapolis	D
South:	
Houston	I
Dallas	D
West:	
Denver	I
Portland	I

* D = direct relationship between SES and distance to center of city in 1960 city-ring comparisons of Schnore (1963, unpublished appendix); I = inverse relationship between SES and distance to center of city in 1960 city-ring comparisons of Schnore (1963, unpublished appendix).

Tract median number of years of school completed was chosen as the index of socioeconomic status for two reasons. First, Schmid (1950) and Schmid et al. (1958) found median education to be most highly correlated with other indicators of socioeconomic status for both 1940 and 1950.[5] Second, the investigations of city-ring SES differentials by Schnore (1957, 1963, 1964) which suggest that age of city has an important influence upon these differentials utilize median education as the SES indicator. In cases where a tract was subsequently broken into parts, a median education was computed for the reconstructed tract by weighting each part by its number of inhabitants.

METHOD

As an ideal test of the statically interpreted Burgess formulation, it would be best to divide each city into five zones delimited by social area analysis and observe changes in the five zones over time. This approach would, of course, raise the same problems of lack of fit to an ideal type that have been previously documented. But the crucial hypothesis here concerns

[5] The magnitude of the correlations in Schmid's research between median education and mean rental value in 1940 (mid-rank $r = .87$) and median income in 1950 (mid-rank $r = .68$) across tracts strongly indicates that substantive findings based upon median income indicators rather than median education indicators of SES would be highly similar. Very similar substantive results would also be expected utilizing an occupational indicator of SES as indicated by the high correlations between median education and percentage professional in 1940 (mid-rank $r = .79$) and in 1950 (mid-rank $r = .82$).

the dynamics of the Burgess formulation—that cities tend to develop a social morphology over time and that the trend of the developmental process is toward a direct relationship between SES and distance from the center of the city. Thus, viewing the process as continuous, it would be ideal to treat distance as a continuous variable and analyze the "wave" of low-SES movement outward toward the periphery of the city over time. However, the cross-sectional nature of the census material and the discrete nature of tracts as reporting units make it necessary to treat the process of redistribution and distance from the city center as discrete.

Given cities which have relatively comparable tract boundaries from 1940 to 1960, the question arises: how many concentric zones can be delimited such that (1) all tracts in a particular zone are about the same distance from the center of the city, (2) each zone contains around twenty tracts so as to avoid problems of percentaging on too small a base, and (3) all cities analyzed have the same number of zones for purposes of comparability? The greater the number of zones delimited, the better the approximation to a continuous notion of distance. However, with half of the cities selected it was possible to delimit only three concentric zones. That is, since cities are of finite radius and are composed of a finite number of tracts, only a certain number of zones of tracts which are contiguous and roughly the same distance from the city center can be delimited. Three zones were also delimited in the four more expansive cities for purposes of comparability by dividing the area into three zones of roughly equivalent radius. Thus, the choice of number of zones is based upon methodological considerations of a best approximation to continuous distance rather than any theoretical notions of socially homogeneous zones.

The implications of this particular procedure in zonal delimitation should be clear: the dynamics of the Burgess notion concerning the emergence of a SES gradient will be supported to the extent that zones closer to the central business district exhibit a trend toward lower SES than adjacent zones further from the city center.

The trend in change over time in SES characteristics can be analyzed by using a stochastic process called a Markov chain (Kemeny and Snell 1960). After dividing each city to be analyzed into three concentric zones, longitudinal observations were made for each tract in each zone using data for 1940, 1950, and 1960. A matrix of transition probabilities was calculated separately for each zone in each city. If a given tract is characterized by a median education above that of the city at one point in time, then it is in State 1; if it is characterized by a median education below that of the city, then it is in State 2. The matrix of transition probabilities, then, gives the probability of going from one state to another or remaining in the same state over a period of one decade. For example, the transition probability matrix, P, for Zone II of Houston (table 2) indi-

TABLE 2

CALCULATION OF TRANSITION PROBABILITY MATRIX FOR ZONE II OF HOUSTON

1940–50 Shifts

	1940	1950 A*	1950 B*	Total
t_{4-5} =	A	4	1	5
	B	1	16	17
	Total	5	17	22

1950–60 Shifts

	1950	1960 A	1960 B	Total
t_{5-6} =	A	4	2	6
	B	1	17	18
	Total	5	19	24†

All 1940–60 Interdecade Shifts

	Time t	Time $t+10$ Years A	Time $t+10$ Years B	Total
$t_{4-6}=t_{4-5}+t_{4-6}=$	A	8	3	11
	B	2	33	35
	Total	10	36	46

1940–60 Transition Probability Matrix

	Time t	Time $t+10$ Years A	Time $t+10$ Years B	Total
Transition probability matrix $= t_{4-6}$ percentaged by rows $= P =$	A	.73	27	1.00
	B	.06	.94	1.00

* A = above the city median education; B = below the city median education.

† Note the addition of two tracts to Zone II as newly tracted in 1950, one above the city median education and one below the city median education.

cates that the probability of a census tract below the city median at one census date going to above the city median at the next census date is .06, of staying below the city median .94; whereas the probability of a tract above the city median staying above the median over a decade is .73, and the probability of its dropping below the median is .27. The use of the city median as a basis of comparison operates as a control on the effect of the general trend toward higher median education in all zones from 1940 to 1960.

Two assumptions must be made in applying a Markov chain to a

change over time: (1) that the transition probability matrix remains constant over time, and (2) that the probability of being in state j at time t is dependent only on state in time t-1 (Kemeny and Snell 1960, pp. 24-25). In this case, then, it is assumed that the rate at which lower-status tracts become characterized by above- or below-average SES people remains constant over time and that the probability that a tract will be characterized by an above- or below-average SES at one census year is dependent only upon its SES characteristic in the immediately previous census year.

Mechanisms, implicit in the model, are that a tract rising above the city median education from one census date to the next is indicative of upward social mobility of stable residents, higher-SES people moving in, or lower-SES people moving out, and vice versa if the tract drops below the city median. The transition probability matrix, P, represents the *trend in the process of SES shifts as effected by an aggregate* of causal variables related to SES increase and decrease of a tract (Kemeny and Snell 1960, p. 25). The magnitude and direction of this aggregate of causal variables are indicated by the equilibrium vector of the matrix, which represents the probability of being in a particular state after a long period of time and, therefore, the proportion of tracts expected to be above or below average at some future time on the basis of present trends. Since the probability of being in state j at time t (given by P) is dependent only upon the state in time t-1, the probability of being in state j at time $t + n$ is independent of the starting state where time $t + n$ is the point at which equilibrium is reached (Kemeny and Snell 1960, p. 26).

FINDINGS

Table 3 gives the proportion of tracts above the city median education in each of three zones for 1940 and 1960, and at time of equilibrium for each of the eight cities. Bearing in mind that median education attainment level is the single but best indicator of tract SES, the equilibrium distribution is a convenient measure for summarizing the process of SES redistribution within each city over the previous twenty years. It gives the proportion of above-average tracts (and below average by subtraction) which would exist in each zone if the process were to continue into the future under the assumptions of the Markov model.

On the basis of recent trends of change in SES, five of the eight cities analyzed would conform perfectly with the hypothesis that SES varies directly with distance from center of the city given a long period of time. Among these are three which showed a direct relationship in 1960 (Rochester, New York; Minneapolis; and Milwaukee), and two which were shown by Schnore (1963) to have an inverse relationship (Houston and Denver). Interestingly enough, two of the three remaining cities (Hartford and Dallas) which did not conform to the hypothesis were of the ex-

pected pattern in 1960. At this point we can only speculate concerning the reasons for these exceptions. The very low proportion of high-SES tracts in any zone in Dallas may indicate that high-SES people are concentrating in areas lying outside the perimeter of the 1940 base area defined herein as the city of Dallas, which seems reasonable, since Dallas is growing at a very rapid rate.[6] In the case of Hartford, Zones I and II are relatively close in the proportion of above-average-SES tracts expected, and Zone III shows a definite expected concentration of high-SES tracts. Portland, Oregon, showing an initial inverse relationship, shows concentration of high SES expected in Zone II, with low-SES concentrations expected in Zones I and III. These exceptions could reflect the crudeness of the measurement in terms of zone boundary delimitations, for if Zones

TABLE 3

PROPORTION OF TRACTS ABOVE THE CITY MEDIAN IN EDUCATION BY CITY, ZONE, AND DISTRIBUTION

City and Distribution	Zone I	Zone II	Zone III
	Expected Pattern		
Milwaukee:			
1940	.33	.45	.69
1960	16	.24	.63
Equilibrium	.05	13	.56
*N**	(89)	(98)	(126)
	More Pronounced Direct Relationship		
Minneapolis:			
1940	.32	.42	.45
1960	.20	.33	.50
Equilibrium	.03	.23	.77
N	(88)	(72)	(84)
Rochester:			
1940	.33	.31	.65
1960	.11	.25	.71
Equilibrium	.00	00	87
N	(36)	(72)	(68)
Denver:†			
1940	.20	.47	.86
1960	.10	40	.83
Equilibrium	.00	.37	1.00
N	(40)	(39)	(19)

* Number of interdecade shifts upon which the equilibrium distributions are based.

† Note that Schnore's city-ring comparison showed overrepresentation of high SES in the central city, whereas this breakdown of Denver into zones shows the expected pattern in 1960.

[6] Dallas showed a 130 percent increase from 1940 to 1960. The only other city with greater than 60 percent increase over the twenty years was Houston; but Houston is politically more extensive than its concentrated population, with the whole county incorporated as Houston.

TABLE 3—*Continued*

City and Distribution	Zone I	Zone II	Zone III
	Reversal to Expected Pattern		
Houston:			
1940	.62	.23	.26
1960	.41	.21	.35
Equilibrium	.00	.18	1.00
N	(58)	(46)	(23)
	All Very Low		
Dallas:			
1940	.13	.59	‡
1960	.07	.30	.60
Equilibrium	.05	.14	.00
N	(30)	(45)	(20)
	High in Zone III; Zones I and II Fairly Close		
Hartford:			
1940	.25	.53	.60
1960	.33	.42	.60
Equilibrium	.36	.26	.63
N	(24)	(38)	(20)
	Low in Zone I; Least Conformity to Expected Pattern		
Portland:			
1940	.43	.57	.29
1960	.38	.57	.29
Equilibrium	20	.64	.35
N	(57)	(28)	(34)

‡ The area comprising Zone III of Dallas contained only five tracts in 1940, three of which were above the city median in education.

II and III were combined into single zones in Portland, Hartford, and Dallas, they would reflect the expected direct relationship at equilibrium This combination of Zones II and III would result in "City-Ring" type comparisons.

The interesting point is that in no case was an inverse relationship expected. That is, it appears that the factors which were involved in producing concentric zonal patterns in the older northern and northeastern cities have not been radically supplanted by new forces operating to produce an opposite, or entirely different, pattern in the newer cities of the South and West. The evidence suggests that time is indeed an important variable; but its importance lies in the time required for the process to develop a zonal structure rather than in differences in technological regimes operating on different cohorts of cities.

CONCLUSIONS

The use of the Markov model has not been that of predicting what SES distributions will look like in the future; rather it is a device for comparing recent trends on the basis of their long-run consequences. Even with the crudeness of the measurements used here, with respect to zone boundary delimitations and use of tract medians as observations, it is evident that longitudinal analysis of urban structural development can reveal trends which are not immediately apparent in cross-sectional analysis. Perhaps more research in this direction, with more refined measures and an emphasis upon process rather than structure, may lead to more fruitful discovery and explanation of rational patterns of organization in the urban scene.

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Retesting the Burgess Zonal Hypothesis: The Location of White-Collar Workers[1]

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Seventeen U.S. metropolitan areas are analyzed individually to determine support for two principal propositions of the well-known Burgess hypothesis: white-collar persons are decentralized in American cities, and the decentralization is greatest in the largest and oldest places. Only a slight tendency is found for the proportion of white-collar workers to increase with linear distance from the central business district in most metropolitan areas. Much of this distance–white-collar relationship may be explained by the spatial location of other population groups, such as Negroes and married couples with children, and by housing types, such as single unit, roomy, sound, and new. Tendencies for white-collar decentralization are indeed greatest in the oldest places. And this relationship may also be explained by the differential location of population groups and housing types in old versus new cities.

Ernest W. Burgess in his well-known 1923 article on "The Growth of the City" argued that blue-collar workers, individuals without spouses, blacks, and ethnic groups would live most frequently in the central parts of cities. The opposite types of groups—white-collar workers, married couples with children, whites, and native Americans—would be found most often on the outskirts. Burgess further argued that these patterns, particularly for higher-status groups, would become clearer as cities aged and grew in size.

Since publication of the "Burgess hypothesis," numerous conflicting claims have been made about its accuracy, particularly in reference to the location of socioeconomic status, including occupational groups. But to date, as far as I know, no one has used the same methodology to determine for a large number of cities whether occupational groups are actually distributed differently by mile distance zones in relationship to the central business district (CBD).

In this paper, I investigate the empirical relationship between linear distance from the CBD and the spatial location of white-collar as opposed to blue-collar workers. The patterns in seventeen standard metropolitan areas (SMSAs) will be analyzed individually, with the use of 1960

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census tract data. I then test two models, consistent with the Burgess arguments, which might account for the decentralization of higher-status groups. Finally, I determine how white-collar decentralization is related to metropolitan area age or period of historical development.

THE PROBLEM

Burgess presented his arguments on the growth of cities in terms of a concentric-zone model. Using Chicago as an example, he described five zones: the first zone consisted of the CBD itself, which was occupied primarily by homeless men. In the second zone, poverty-stricken ethnic and racial groups lived. Rooming-house districts would also be found there. Beyond this zone were located stable workingmen's families, generally second-generation ethnic groups. Zone 4 was a residential area containing exclusive single-family dwellings and "high class" apartment areas. Finally, the fifth zone was a rather ill-defined commuters' zone. Burgess argued that these zones would become increasingly well-defined or the city would differentiate as it aged and grew in population size. Burgess was most explicit about this differentiation in regard to occupational groups, although it is possible to find both implicit and explicit arguments in this work about differentiation in regard to all four population types. If one attempts to conceptualize the Burgess argument in terms of a model of general proximity of population groups to the CBD, it is clear that upper socioeconomic status (SES) groups would be found on the outskirts while racial and ethnic groups would be found near the center. The argument for the location of types of families is much less clear, although it is apparent that individuals without spouses would live near the centers of cities while couples, presumably with children, could be found on the outskirts. The argument about the location of families was more clearly stated in Burgess's later work (1963, p. 68).

The most serious empirical challenge to the Burgess hypothesis has been made by Homer Hoyt (1939), who argued that high-SES groups primarily locate in a sectoral of axial pattern in relationship to the CBD. Hoyt's evidence was based on the spatial location of high-rent districts, which are not necessarily the same as high-SES districts, although a correlation clearly exists. Hoyt's findings are not necessarily incompatible with the Burgess argument. One may find *both* concentric and sectoral location tendencies for higher-status groups.

More recently, emphasis has been placed on the evolutionary nature of Burgess's argument in regard to the location of SES groups. The foremost exponent of this interpretation, Leo F. Schnore (1965, pp. 201–17), has empirically shown that the hypothesized Burgess model is often not validated when central-city–suburban status differences are considered. Nevertheless, higher suburban SES status has been found most often in

the largest and particularly the oldest metropolitan areas. There is some question whether these findings may be at least partially an artifact of the location of central city boundaries, which differ in "old" as opposed to "new" cities. Schnore and Winsborough (1969) further extended this analysis by showing that some of these "age" and "size" effects are actually due to other characteristics of the metropolitan area, such as the housing stock, the functional base, and the racial composition. Hopefully, urban ecologists will increasingly move in Schnore's direction, toward "explanation" rather than simple description of spatial patterns. This paper may be seen at least partially as an extension of Schnore's work, but it uses a more refined measure of location than the crude city-suburban distinction.

One group of urban researchers, known as factorial ecologists, has further extended Schnore's work by arguing that SES variables vary concentrically only in the largest and oldest places, but family characteristics vary concentrically, regardless of the size and age of places. This argument is based on analysis of numerous individual factorial studies of cities, both American and foreign. A thorough review of this literature is provided by Rees (1968).

Given these previous research findings, I shall suggest two different "theories" which might account for the decentralization of white-collar persons in American metropolitan areas. While Burgess was very vague about causal interrelationships in his hypothesis, we believe these "theories" are basically compatible with his formulations. One theory will be known as the "population" model, the other as the "housing" model.

The population model suggests that higher-status groups may be decentralized in American cities because they are disproportionately white, native American, and married couples with children. In other words, the decentralization of whites, native Americans, and married couples with children would produce the decentralization of higher-status persons. Of course, alternate theories could suggest, say, that native Americans are decentralized because of their higher status. Without reporting the results here, we can say that very little support was found for other population models. The higher SES of whites, native Americans, and married couples is suggested by a variety of data. The higher status of whites as opposed to Negroes needs no documentation. Elsewhere (Guest 1970) I have shown that married couples with children are higher in SES than individuals without spouses. In Burgess's day, it was clear that first- and second-generation Americans were lower in status than third-generation or native Americans. However, this relationship today may be highly dependent on locality and specific ethnic groups. Taeuber and Taeuber (1967) point out that the average occupational status of U.S. immigrants has generally been increasing over time.

To test this "population" hypothesis, we would want to look at the effect of linear distance from the CBD on the spatial location of higher-status groups when the interrelationships among the population characteristics have been controlled. Using multiple regression analysis, we would run equations with distance, racial, family, and ethnic characteristics as independent variables and the SES character of the tract as the dependent variable.

The empirical test of this model has problems revolving around the use of aggregate (or ecological) data to make individual inferences. Let me explain by an example. If we find a negative correlation of percentage Negro with percentage white-collar over census tracts, the result would hopefully indicate that Negro populations tend to be lower in SES than white populations. However, the correlation may result from lower-status whites living in black areas. Thus, the ecological correlation could result conceivably from the properties of the white, not the black, population. Hopefully, comparable data on individuals for a large number of individual cities will be made available soon. More likely, we shall have to wait some time; as a result, I am commiting the "ecological" fallacy, due to a lack of alternatives. I believe that my "ecological" correlations are generally compatible with what would be found on an individual level.

The second, "housing," model would be based on the distribution of housing by its structural soundness, age, single-unit character, and rooms per dwelling. Once again, aggregate census-tract characteristics would be used. It is clear from Burgess's various articles on the city that he conceived of the location of different population groups as at least partially a function of the distribution of types of housing. Higher-status persons may be decentralized because the larger housing, in terms of number of rooms and single-unit character, is also decentralized. Higher-status persons might not only have a "taste" for this type of housing but would also be financially able to afford it. Since Burgess believed that neighborhoods declined in their general SES level over time, neighborhoods of older housing—generally found near the city center—should have disproportionately lower-status residents. Finally, it is possible to detect in the work of Burgess the notion that the central parts of cities deteriorate or become structurally unsound and repel higher-status persons.

A test of this model would involve the regression of distance from the CBD and the four housing variables on the proportion white-collar for each census tract. If the partial regression effect of distance dropped to zero, it would appear that most of the decentralization of higher-status groups could be "explained" by the differential spatial location of types of housing.

If these two models are correct, they may help us explain how city age and size affect the relative decentralization of higher-status groups. White-collar persons may be most decentralized in the oldest places because whites, native Americans, and married couples with children are also most decentralized in these places. White-collar persons may also be decentralized in the oldest places because single-unit, roomy, sound, and new types of housing are also most decentralized in these places.

The paper will now turn to methodology—how the sample of metropolitan areas was selected and how the variables were operationalized. The Burgess hypothesis will then be tested in four ways: (1) by looking at the zero-order correlations of population characteristics with distance from the CBD over the seventeen metropolitan areas; (2) by looking at the relationship between distance and the proportion white-collar when the location of racial, ethnic, and family groups has been controlled; (3) by looking at the relationship between distance from the CBD and the proportion white-collar when the distribution of housing by its number of rooms, single-unit character, soundness, and age has been controlled; and (4) by looking at the effect of the metropolitan area age on the relative decentralization of the higher-status groups.

METHODOLOGY

The seventeen metropolitan areas were selected nonrandomly from the four principal U.S. census regions to represent a variety of city sizes and ages. The places tend to emphasize manufacturing in their economic bases and do not have unusual racial compositions for their regions. By census definition, metropolitan areas generally include central cities of at least 50,000 population, the surrounding county, and other counties which are socially and economically integrated with the central city. The sample places generally do not have unusual shapes or geographies, which means they are probably an unrepresentative sample of U.S. metropolitan areas. But they generally are the types of places where the Burgess hypothesis would be most expected to hold, since his arguments were based on a conception of the typical city as flat and relatively circular. These findings might not be valid for a truly random sample of U.S. metropolitan areas, since a large number have distorted topographies.

Almost all census tracts were included in the samples from the seventeen places. Tracts were generally eliminated if more than 5 percent of the population was institutionalized or the total population was less than 100 persons. Data on housing and population were drawn from tables P-1, P-3, and H-1 of census-tract reports (U.S. Bureau of the Census 1961).

The sample SMSAs by region are: Northeast: Boston, Buffalo, New Haven, Rochester; South: Atlanta, Birmingham, Charlotte, Houston; North Central: Akron, Cleveland, Detroit, Flint, Fort Wayne; West: Albuquerque, Denver, Phoenix, Seattle.

Population variables were operationalized in the following manner:

Occupation.—The percentage white-collar of employed males, occupation reported. Census white-collar occupations are: professional, technical and kindred workers; managers, officials, and proprietors; clerical and kindred workers; sales workers.

Ethnicity.—The foreign-stock population was taken as a percentage of the total population. Foreign stock includes first- and second-generation residents of the United States. Third-generation persons would be considered as native Americans.

Race.—The percentage Negro in each tract provided a highly skewed distribution, because most census tracts have very few Negroes and a few have almost all Negroes. To normalize the distribution, the variable was operationalized as the natural logarithm of the percentage Negro.

The ethnic and racial composition of the metropolitan areas varies greatly. In the South, Negroes comprise at least 20 percent of the population, while elsewhere, particularly in the West, they form smaller proportions of the population. The foreign-stock population is particularly concentrated in the North Central and Northeastern regions. Our analysis generally does not include nonwhite Orientals and such minority groups as Spanish Americans and Puerto Ricans. These groups are important only in the western metropolitan areas and Houston. We removed them from the analysis so that the same variables would be used in all metropolitan areas.

Familism.—To determine the basic dimensions of family status, the principal-components statistical procedure—a form of factor analysis—was performed on the correlation matrix of six types of households for each metropolitan area. This procedure produced a basic dimension of family status which was very similar to that suggested by Burgess. Neighborhoods could be characterized by the presence of married couples with children as opposed to individuals without spouses.

Of the six household types included in the factor analysis, four types basically followed the "life cycle" of married life. They were (1) Young Couples, male spouse under forty-five but without children under eighteen at home; (2) Young Families, male spouse under forty-five with children under eighteen at home; (3) Old Families, male spouse over forty-five with children under eighteen at home; and (4) Old Couples, male spouse over forty-five with no children under eighteen at home. The other two types were: Primary Individuals, generally persons living

by themselves; and Single Heads, person living in a family arrangement with relatives but without a spouse present.

In all seventeen metropolitan areas, the first extracted factor basically included Young and Old Families (married couples with children loading in one direction), while Primary Individuals and Single Heads (individuals without spouses) loaded in the other direction. Factor scores were generated for each metropolitan area by using the factor loading as a validity coefficient. Each variable's score for each census tract was multiplied by the validity coefficient. The scores for each variable were then summed to provide a total tract score. A positive score indicated disproportionate numbers of individuals without spouses, while a negative score indicated disproportionate numbers of married couples with children. The production of these factors and operationalization of the household types are described elsewhere (Guest 1970) in more detail.

Housing variables were operationalized as follows: the age of housing was the percentage of housing units built after 1940 and the size of housing or rooms as the percentage of units with at least five rooms. Percentage single unit and sound were operationalized according to the standard census definitions. Non-sound housing is rated as deteriorating or dilapidated.

Distance was determined by drawing one-mile concentric zones from the approximate geographic center of the CBD (U.S. Bureau of the Census 1966). Each tract was placed in its most appropriate one-mile zone In some SMSAs, the outer zones were collapsed into one zone because the census tracts extended for more than one mile.

LINEAR DISTANCE

In this section, I shall first investigate the relationship between linear distance from the CBD, on the one hand, and the occupational, family, ethnic, and racial variables on the other hand. I shall then test the "housing" and "population" models to explain the location of socioeconomic groups. The population model involves the regression of distance from the CBD, and the family, the ethnic, and the racial variables on the proportion white-collar as the dependent variable. The housing model involves the regression of distance from the CBD, housing age, housing structural soundness, housing single-unit character, and housing space or rooms on the proportion white-collar as the dependent variable. The summary correlation coefficients of the variables in the two models are presented in table 1. The relationship between linear distance from the CBD and the proportion white-collar is shown in table 2 for each metropolitan area.

As table 2 indicates, linear distance from the CBD tended to correlate positively with the proportion white-collar over the sample of metro-

TABLE 1

MEAN CORRELATIONS OF VARIABLES IN POPULATION AND HOUSING MODELS OVER SEVENTEEN SMSAs, 1960

A. POPULATION MODEL

	Distance	Race	Ethnicity	Family	Occupation
Distance......	...	−.334 (.159)	−.241 (.219)	−.693 (.074)	.183 (.218)
Race	...	...	−.201 (.253)	.406 (.120)	−.420 (.129)
Ethnicity.....	...	...	...	.097 (234)	.232 (.348)
Family......	...	...	..	..	−.243 (.123)
Occupation...	...	..	...	. .	...

B. HOUSING MODEL

	Distance	Sound	Age	Units	Rooms	Occupation
Distance.....	...	.285 (.208)	.605 (.139)	.674 (.163)	.463 (.187)	.183 (.218)
Sound......	..	.	486 (.076)	356 (.162)	564 (.141)	.577 (.089)
Age ..	..	..	..	.621 (.189)	.424 (.319)	.359 (.115)
Units	...	..	...	...	.627 (.181)	.216 (.204)
Rooms ..	..	..	...	...	..	.550 (137)
Occupation	.	..	..	...	..	..

NOTE.—Standard deviations are in parentheses.

politan areas. In twelve of the seventeen areas, distance from the CBD was matched by increasing proportions of white-collar workers, although the correlations were generally quite low. The highest correlation, .538 for Cleveland, meant that less than 30 percent of the variance in the proportion white-collar could be explained by linear distance from the CBD. The square of the correlation coefficient indicates the proportion of variance in one variable which is explained by another. An unsuccessful effort was made to obtain higher correlations with the proportion white-collar by using nonlinear measures of distance, such as logarithmic and quadratic functions. In general, these measures were poorer predictors than linear distance, although log distance worked approximately as well.

Table 2 also indicates the proportion white-collar predicted for various one-mile distance zones. The value at the center shows the predicted proportion white-collar in the first mile distance zone. The gradient indicates the change in the proportion white-collar for each additional

TABLE 2

HYPOTHETICAL VALUES AT CENTER, GRADIENTS BY DISTANCE FROM CENTER, AND CORRELATION COEFFICIENTS FOR PROPORTION WHITE-COLLAR FOR SEVENTEEN SMSAs, 1960

Metropolitan Area	Value at Center*	Gradient†	r‡	Mean§	SD‖
Northeast:					
Boston	33.01	1.99	.359	42.99	17.81
Buffalo	29.64	1.04	.175	35.90	16.94
Rochester	30.76	3.86	.428	39.86	16.60
New Haven	34.05	4.16	.339	43.26	17.67
North Central:					
Detroit	24.53	1.26	.249	35.70	29.10
Cleveland	14.87	5.15	.538	37.02	21.43
Akron	25.11	3.13	.315	34.02	17.74
Flint	30.57	−1.08	−.120	28.12	13.12
Fort Wayne	39.10	1.42	.203	42.51	12.57
South:					
Houston	41.79	−0.13	−.015	41.02	24.52
Atlanta	36.20	1.82	.205	44.81	25.26
Birmingham	32.83	−0.33	−.038	31.42	21.13
Charlotte	36.36	3.44	.259	45.88	24.89
West:					
Seattle	53.65	−1.31	−.292	44.63	16.65
Denver	36.30	2.30	.291	47.11	21.00
Phoenix	44.24	−0.55	−.072	41.13	21.84
Albuquerque	35.27	2.64	.281	45.31	21.52

* Value at center indicates the predicted percentage white-collar in the first mile distance zone from center of the CBD.

† Gradient indicates the predicted change in the percentage white-collar with each additional mile distance zone from the CBD.

‡ Correlation coefficient (r) indicates the correlation between linear distance from the CBD and the proportion white-collar.

§ Mean indicates the average proportion white-collar over all census tracts in the metropolitan area.

‖ SD indicates the standard deviation or dispersion of the proportion white-collar over the census tracts.

mile distance zone. These figures also indicate that most metropolitan areas show little differentiation between their centers and outskirts.

In keeping with the Burgess hypothesis, Negroes, ethnic groups, and individuals without spouses were also found centralized while whites, native Americans, and married couples with children were decentralized. On the average, the family variable had a −.693 correlation with distance from the CBD; the average correlations of the ethnicity and race variables were −.241 and −.334, respectively. Negroes and individuals without spouses were centralized in all seventeen places, while the foreign-stock population was centralized in fourteen and slightly decentralized in three metropolitan areas. Since the average correlation of the distance variable with the proportion white-collar was .183, the metropolitan areas appear least differentiated spatially in regard to occupational groups.

The results of the multiple regression analysis for the "population"

and "housing" models are presented in table 3. In interpreting the results, it should be remembered that the zero-order correlations between distance from the CBD and the proportion white-collar, reported in table 1, also indicate the standardized regression effect of distance on the proportion white-collar. The standardized partial regression effects of the variables other than distance are presented primarily because the unstandardized coefficients for the race (expressed in logarithms) and the family (expressed in factor scores) variables do not have easily understood substantive interpretations. However, the standardized coefficients should be interpreted with care, since the distributions of the variables differ across the sample of metropolitan areas. The standardized coefficients of distance will be used, since we are interested in total measures of differentiation for each metropolitan area that are independent of the distance in miles from center to outskirts.

As table 3 indicates in regard to the "population" model, the standardized partial regression effect of distance, once the other population characteristics are controlled, was less than the zero-order effect in thirteen of the seventeen places. Over the sample of metropolitan areas, the average standardized regression effect dropped from a zero-order

TABLE 3

STANDARDIZED PARTIAL REGRESSION COEFFICIENTS FOR DISTANCE, RACE ETHNICITY, AND FAMILY VARIABLES IN PREDICTION OF PROPORTION WHITE-COLLAR FOR SEVENTEEN SMSAS, 1960

Metropolitan Area	Distance	Race	Ethnicity	Family	R^2	df*
Northeast:						
Boston	.223	−.149	−.160	−.050	.161	413
Buffalo	.136	−.424	−.203	171	.168	119
Rochester	− 135	−.543	− 331	−.203	.371	132
New Haven	437	− 205	− 006	.309	.185	56
North Central:						
Detroit	.222	−.017	.257	−.055	141	756
Cleveland	663	−.164	.091	.261	348	350
Akron	−.011	− 305	.336	− 259	365	87
Flint	− 030	.147	.761	−.276	517	66
Fort Wayne	−.080	−.458	.346	−.395	.434	52
South:						
Houston	−.103	−.362	.163	−.094	.184	183
Atlanta	.168	−.373	.544	− 002	.620	180
Birmingham	−.068	− 400	.472	− 009	.558	98
Charlotte	.062	−.210	693	−.227	849	67
West:						
Seattle	−.669	−.382	.088	− 456	.363	236
Denver	.075	−.364	.166	− 239	.272	173
Phoenix	−.226	−.405	−.065	−.180	.244	132
Albuquerque	.424	−.123	.592	179	.451	56
Mean	•.064	−.279	.220	−.090	.367	..
Standard deviation	.300	.177	.322	222	.192	...

* df = degrees of freedom.

.183 to a partial .064. Thus, much of the distance–white-collar relationship could be attributed to the location of other population groups. However, there were some notable exceptions, such as Cleveland, to this general finding. The regression equations suggest that white-collar persons are decentralized primarily because whites and married couples with children are also disproportionately decentralized. In general, ethnicity centralizes white-collar persons, since foreign-stock areas are positively related to the proportion white-collar but negatively related to distance from the CBD. Ethnic areas were lower in status in the Northeastern metropolitan areas, for poorly understood reasons. The generally higher status of ethnic areas, although not their centralization, is inconsistent with the Burgess argument.

The testing of the housing model led to results more consistent with expectations. One would expect that housing variables might predict socioeconomic-group location, since they correlated positively with distance from the CBD, particularly the single-units and housing-age variables. As table 4 shows, the effect of distance on the proportion white-collar was reduced in fifteen of the seventeen metropolitan areas when the spatial locations of housing types were controlled. While the

TABLE 4

STANDARDIZED PARTIAL REGRESSION COEFFICIENTS FOR DISTANCE AND HOUSING VARIABLES IN PREDICTION OF PROPORTION WHITE-COLLAR FOR SEVENTEEN SMSAs, 1960

Metropolitan Area	Distance	Sound	Age	Units	Rooms	R^2	df*
Northeast:							
Boston	−.189	.450	− 040	.556	− .078	512	413
Buffalo	.114	.440	.053	− .122	.298	.360	119
Rochester	−.050	411	.477	− .264	222	452	132
New Haven	−.291	.233	.002	.303	.262	243	56
North Central:							
Detroit	.118	.219	.291	− .287	.271	206	756
Cleveland	.260	.249	.198	− .263	.317	394	350
Akron	.091	221	.620	−1.001	851	.682	87
Flint	−.240	559	.066	− .358	.475	570	66
Fort Wayne	−.161	.338	.262	− .274	.661	.562	52
South:							
Houston	−.017	.181	−.010	− .631	868	.699	183
Atlanta	−.013	344	−.174	− .493	949	693	180
Birmingham	−.230	.267	.092	− .295	.657	702	98
Charlotte	−.010	.022	.073	− .492	1.033	.751	67
West:							
Seattle	− 264	.219	.150	− .298	.487	418	236
Denver	.140	.356	.048	− .416	626	534	173
Phoenix	−.007	.323	−.124	− .243	.650	.610	132
Albuquerque	−.060	.248	.071	− .208	.591	.611	56
Mean	−.048	299	121	− .282	.538	.524	
Standard deviation	.161	.125	.202	.339	.297	.165	

* df = degrees of freedom.

average zero-order effect of distance was .183, the partial standardized regression effect was −.048. The distributions of white-collar persons in relation to the CBD may be almost completely explained statistically by housing age, soundness, single-unit character, and number of rooms. Cleveland was the only metropolitan area where distance showed a strongly positive relationship with the proportion white-collar after the housing variables were controlled.

From the regression equations, reported in table 4, it is clear that the best general predictor of the proportion white-collar was the spatial or rooms variable. Contrary to expectations, the single-units variable generally had a negative partial relationship with the proportion white-collar. Once the distance and other housing variables were controlled, white-collar persons were disproportionately found in areas of multiple-unit housing. Thus, it appears that the distribution of single-unit housing, independent of its other characteristics, is a factor centralizing white-collar persons. Consistent with expectations, the soundness of dwellings was a positive predictor of the proportion white-collar. Deterioration of neighborhoods does seem to be a force repelling white-collar persons. The housing-age variable also generally had an effect consistent with expectations, but in many places the relationship was quite weak. In any case, these partial regression effects should be interpreted with care. Some housing variables, such as the rooms and the single-unit variables, may be practically interchangeable because of their high correlation. The partial effect of one, controlling for the other, may have little substantive interpretation.

Let us now turn to the effect of urban characteristics such as age and population size on the relative decentralization of the higher-status population.

CITY AGE

On a cross-sectional basis, it is possible to determine the association of metropolitan "age" with the relationship between distance and the proportion white-collar. "Age" will be correlated with the zero-order and the standardized regression effects of distance on the proportion white-collar. These standardized regression effects of distance on the proportion white-collar will be known as "white-collar decentralization." Analysis of the unstandardized distance–white-collar coefficients generally indicated the same results as analysis of the standardized coefficients. In essence, I shall be using regression coefficients for the distance–white-collar relationship as dependent variables in another correlation or regression analysis.

I should note that the zero-order regression coefficients of distance on the white-collar variable did not consider the interrelationships among

the white-collar, population, and housing variables. The partial relationship, of course, did take this into consideration.

Admittedly, the use of regression coefficients as dependent variables in further regression analysis is a risky business. Those who have better measures of the overall relationship between distance and the proportion white-collar for individual cities are urged to supply and test them.

Burgess was concerned about what happens to population differentiation as a metropolitan area both ages and grows in size. Asking the question separately is somewhat redundant, since the two are highly related. Our measure of age correlated .571 with population size. Since population size showed little relationship with urban differentiation in regard to white-collar groups, I shall drop it from the analysis.

Age was operationalized as the census year in which the central city reached 50,000 population. Metropolitan areas which reached this status before 1890 were coded as 2; between 1890 and 1910 as 1; 1920 and later as 0. Streetcars were first used extensively in the period around 1890. After 1920, automobiles became popular. Both means of transportation permitted greater deconcentration of housing and population, since travel time to the CBD was shortened.

City age correlates with the degree of decentralization for most of the population and housing characteristics. City age correlates +.504 with white-collar decentralization; .185 with family status decentralization; −.177 with ethnicity decentralization; −.519 with race decentralization; +.440 with sound decentralization; .681 with single-unit decentralization .366 with new housing decentralization; and .268 with rooms decentralization. Thus, in general, the older the metropolitan area, the greater the decentralization of white-collar workers, white Americans, sound housing, single-unit housing, new housing, and roomy housing. Family decentralization and ethnic decentralization have very little relationship to metropolitan age. In general, then, these results support Burgess's notion of urban differentiation over time.

Since housing decentralization seems to be more related to metropolitan age than population decentralization, we would expect age to be a better predictor of the partial distance–white-collar relationship in the housing than the population model. This is true. The age of the metropolitan areas has a .185 correlation with the decentralization of white-collar workers when the location of housing types is considered. Thus, white-collar workers are only slightly more decentralized in old metropolitan areas once the location of housing is considered. The age of the metropolitan area has a .318 correlation with the decentralization of white-collar workers when the location of other population groups is considered. Thus, the effect of age on white-collar decentralization is reduced from the situation in which location of other population groups

was not considered. But there is still a slight tendency for the oldest metropolitan areas to have the greatest decentralization of white-collar workers, even when the location of other population groups is considered.

While the procedure produces confusing results conceptually, it is possible to run both the population and the housing variables together with the distance variable for each metropolitan area against the proportion white-collar. The confusion arises from the difficulty in providing a substantive interpretation to the regression effects of the housing and population variables when their relationships with each other are controlled. But if one runs these equations, it is possible to obtain the standardized partial regression effect of distance on the proportion white-collar when the distributions of housing and population are controlled. This new measure of white-collar decentralization has a −.043 correlation with metropolitan age, indicating that all of the greater decentralization of white-collar workers in older areas may at least be explained statistically by the distribution of population and housing variables.

SUMMARY

I have found some tendency, generally slight, for the proportion white-collar to increase with linear distance from the CBD in twelve of seventeen metropolitan areas. Thus, the so-called Burgess hypothesis appears to be a fairly accurate description of the spatial patterns of most cities in our sample, but most of the variance in occupational status among census tracts is left unexplained.

Two models, consistent with the Burgess arguments, were then tested to explain the relationship between distance and proportion white-collar. We found the "population" model to be a poorer predictor than the "housing" model of white-collar location in the city. In regard to the population model, white-collar persons are decentralized because whites and married couples with children are decentralized. Interestingly, the centralization of foreign-stock population generally seems to centralize white-collar persons. The housing model suggested that white-collar persons are decentralized in cities primarily due to the decentralization of sound and roomy, and possibly newer, housing. Single-unit housing, which is decentralized, actually had a negative effect on the proportion white-collar when distance and other housing variables were controlled.

Consistent with the Burgess hypothesis, white-collar persons are most decentralized in the oldest metropolitan areas. However, most of this relationship appears due to the location of housing types and population groups in older versus newer areas.

Obviously, this paper has relied on relatively crude measures of distance–socioeconomic-group location. Different socioeconomic measures

might produce contrasting results, although my perusal of the literature and fragmentary empirical analysis suggest otherwise.

In the future, I would hope to specify and test more detailed models of how cities differentiate over time in their population and housing characteristics. Given the increasing accumulation of census-tract data over time, this type of project is readily feasible. Some recently developed statistical techniques for longitudinal analysis, such as path analysis (Duncan 1966), might be particularly helpful in developing these models.

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Commentary and Debate

COMMENTS ON BOYLE'S "PATH ANALYSIS AND ORDINAL DATA"[1]

Boyle (1970) has made a significant contribution to the literature in showing how to use dummy variables in path analysis as a device for investigating scale characteristics. However, if path analysis is applied in causal analyses without provision for unmeasured "underlying" variables, there is an implicit assumption that the causative variables are measured without error (i.e., perfect reliability and validity). When each scale unit of an independent variable is treated as a category in Boyle's procedure, no measurement error corresponds to no errors of placement into categories. If there are placement errors, then the observed scale category may not correspond to the "true" scale category, that is, the dummy variable set used by Boyle to code the scale units for an independent variable would correspond to an observed set of fallible variables which are indicators of an underlying set of "true" dummy variables. Figure 1 illustrates the relationships among true and observed dummy variables for a four-unit scale, residual arrows corresponding to errors of placement into that scale category. The number of observed dummy variables (D_a, D_b, D_c) is one less than the number of scale units or categories, and the true dummy variables (T_a, T_b, T_c) are shown as nonindependent because inclusion in one category necessarily involves exclusion from another category. Since dummy variables are dichotomous, the product moment correlations among these variables are ϕ coefficients. Application of path principles to figure 1 shows that the system is underidentified since there are only three correlations among observed variables as compared with nine unknowns (three correlations among errors, three correlations among true dummy variables, and three reliabilities). One solution to the underidentification problem is to use at least three experimentally independent indicators of the independent variable, each of which has the same number of scale categories. For example, in the case of three independent indicators each of which has four levels (i.e., categories), the resulting path diagram would include three "observed" dummy variables (e.g., D_{a1}, D_{a2}, D_{a3}) for each "true" dummy variable (e.g., D_a), the placement errors for a given category on one measure being independent of placement errors in the same or different categories for the other two measures. A path

[1] The research reported herein was performed pursuant to grant no. OEG-2-7000 33(509) with the United States Department of Health, Education, and Welfare and the Office of Education.
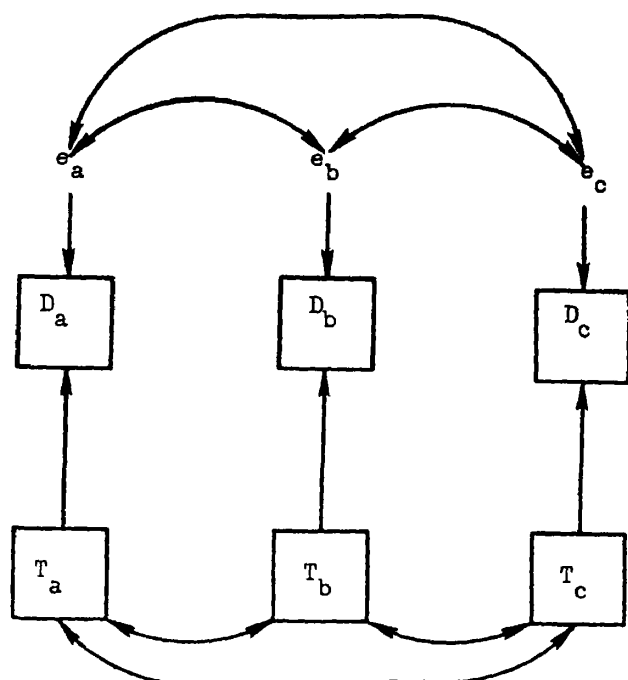
FIG. 1.—Path diagram showing relationships among true and observed dummy variables for a four-unit scale.

analysis of this diagram shows that the system is overidentified (36 observed correlations vs. 21 unknown correlations and path coefficients) When the usual dummy variable coding is used (Decomposition II in Boyle's table 1), the correlation (ϕ) between any two true dummy variables is a function only of the true proportion in these categories:

$$\phi_{T_a T_b} = \sqrt{\frac{P_a}{Q_a}\frac{P_b}{Q_b}}\,, \tag{1}$$

where $\phi_{T_a T_b}$ is the correlation between T_a and T_b, P_a is the true proportion in category a, P_b is the true proportion in category b, $Q_a = 1 - P_a$, and $Q_b = 1 - P_b$.

It follows from equation (1) that if the correlations among the three true dummy variables are identifiable, then the proportions of the true classification in each category may be identified. The variance of a dichotomous variable is equal to the proportion in that category times the proportion not in that category (e.g., $V_a = P_aQ_a$), and the mean is equal to the proportion in that category (e.g., P_a). The variances and the correlations could be used to calculate covariances or unstandard-

zed regression weights as desired. A dependent variable (Y) may be added to the path diagram, path analysis principles again allowing us to find the equations for the unstandardized regression weights on each of the true dummy variables. When the second type of dummy variable coding in Boyle's table 1 is used, the true regression weights represent the difference between the true Y mean of the group coded "1" in that dummy variable and the true Y mean of the reference group. When Boyle's (1970) first type of dummy variable coding (Decomposition I in table 1 of Boyle's paper) is used, then the true regression weights represent the true difference between successive category means, that is, a test of the equal interval assumption under "effect" scaling. This analysis indicates that one of the reasons that the observed regression weights may differ from one scale category to the next is that the degree of measurement error may differ at different points on the scale.

The analytical model discussed above would still apply if the observations consisted of three independent sorts into a set of nominal categories. In this case the analysis is equivalent to an analysis of variance with fallible group information, and the problem is whether the true group means really differ, that is, whether the regression weights for the true dummy variables are all zero.

In passing it might be noted that for overidentified models of the type discussed above, a procedure for estimating the parameters of the model is needed. As Goldberger (1970, p. 25) notes: "the path analysis literature offers no guidance on systematic estimation of overidentified models." Because the distribution of variables (true and observed) is multinomial, the function to be minimized (Mote and Anderson 1965; Cochran 1968, pp. 647–48) for estimation purposes is a χ^2 involving observed and hypothetical ("expected") probabilities. The dummy variable path analysis equations therefore must be translated into probability functions to obtain estimates in overidentified models. In our opinion, path analysis is useful in this type of problem because it helps deal with questions of identifiability, and it is easier for the researcher to conceptualize the relationships among variables.

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Educational Testing Service

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FURTHER COMMENTS ON BOYLE'S "PATH ANALYSIS AND ORDINAL DATA"[1]

One of the more important contributions of Boyle's paper (1970) is his extension of the work of Borgatta (1968) and Labovitz (1967, 1970) on the consequences of assuming equal intervals for supposedly ordinal data. For example, his presentation of the source of distortions in regression and correlation coefficients via "zigzag" regression lines is a clear conceptual explanation of Labovitz's empirical findings. Thus, Boyle effectively advances the argument that distortions resulting from the use of parametric statistical techniques, and their attendant equal-interval assumption, may not be as serious as once was thought. Our comments on Boyle's paper primarily focus on some errors in his treatment of dummy variables in path analysis and on his proposals for recalibrating measures. We also attempt to extend and clarify some key statements in the paper.

On the Use of Dummy Variables in Path Analysis

In his second major section, Boyle illustrates the use of dummy variables as dependent, independent, and intervening variables in path models. Such use allows one to examine the detailed workings of the model that would be hidden by more summary methods. This section is stimulating in the possibilities it reveals for additional analytic techniques, although Boyle makes a few rather simple statistical mistakes which undermine the validity of some of his suggested procedures. In the following section, we shall attempt to correct these mistakes and show the resulting implications for the use of dummy variables in path analysis.

Boyle frequently employs dummy variables as dependent variables in certain regression equations. As the econometricians have long known, using restricted variables as dependent variables in a regression equation

[1] This paper was initiated as a presentation to the seminar of the Methodology Training Program at the University of Wisconsin. We would like to thank especially Robert M. Hauser, Donald J. Treiman, Hal H. Winsborough, and Arthur S. Goldberger, and also Richard T. Campbell and David R. Heise, for their helpful comments and advice. Computing funds were made available through National Institute of General Medical Sciences grant GMO-1526.

an create some statistical anomalies. Specifically, it is quite possible hat observations with extreme values on the independent variables ill have predicted values outside the range of a dichotomous dependent ariable. That is, observations may be predicted to have values greater han 1.0 or less than 0.0 on the dependent dichotomy. Obviously, such redictions are interpretively meaningless. Although a number of ad hoc rocedures have been proposed to deal with this problem, one of the nore widely accepted is "probit analysis." This analysis, in effect, flattens the regression curve at both ends of the dichotomous range, thus nsuring that all predictions do indeed fall within the range of 0.0–1.0 see Goldberger 1964, pp. 250–51). Rather than belabor this point, we imply advise the reader that the use of dichotomies as dependent variables creates special statistical problems that should be carefully considered.

In his section dealing with the use of dummy variables as independent ariables, Boyle makes a rather simple but serious statistical mistake, which he builds into a series of erroneous statements, culminating in the alse conclusion that "the operation of adding together paths through lummy variables *implicitly* assumes an effect-proportional interval scale for the parent independent variable" (p. 473). For the sake of implifying our presentation, we will quote Boyle's complete statement on this point:

> As before, the translation to dummy variables completely determines them and taking account of the difference in units, the effect of each CIS variable on its dummies is .50. Then applying path operations to get the total effect of, say, research choice (RC) means, in essence, taking the arithmetic mean of the effects of RC_1 and RC_2. But since these coefficients are actually the slopes of the zigzag regression line of research choice on alienation, this averaging procedure is equivalent to *making* the zigzag line straight by altering the interval scale for company encouragement [research choice?]. This follows from the earlier discussion of zigzag regression lines. Thus the operation of adding together paths through dummy variables *implicitly* assumes an effect-proportional interval scale for the parent independent variable.
>
> One consequence of this is that we will not necessarily get the same results for an independent variable when we assume equal intervals and when we use dummy variables. This is evident in figure 4, where the estimated effects of the CIS variables are compared using both methods. [P. 473, emphasis in original]

We propose to demonstrate, both logically and empirically, that almost every assertion made in the above excerpt is either incorrect or misleading. In contrast to Boyle, our conclusion is that the effect of an ordinal variable on some dependent variable is in *no* meaningful way made effect-proportional by the translation through the dummy variable decomposition, and, in fact, that this use of dummy variables has, if prop-

erly done, absolutely *no* effect on the original relationship. We shall then show that, despite this conclusion, Boyle's treatment of dummy variables as intervening variables, like his discussion of dummy dependent variables, remains essentially correct.

It appears that Boyle's initial statement is the key to his errors. He states: "As before, the translation to dummy variables completely determines them, and taking account of the difference in units, the effect of each CIS variable on its dummies is .50." It is actually very unclear to us exactly what he is saying in this sentence. First, it is obvious that the parent variable does not completely determine its dummies when they are taken separately. In fact, as we soon show, the true regression of a dummy on its parent variable is a nonlinear regression. This makes complete determination impossible in the context of *linear* regression with which we are dealing. Alternatively, Boyle may mean that the *set* of dummy variables is determined by the parent variable. Although such an assertion is correct, its only implication is that the sum of the paths from the parent variable to its dummies must equal 1.0, a proof we present later. This fact, however, in no way dictates the specific values the individual path coefficients must assume. In short, there is nothing in this first sentence which logically leads one to assign values of .50 to the two paths in question.

In the face of this ambiguity, we investigated the problem empirically with a data set collected immediately following the black student strike at the University of Wisconsin in the spring of 1969. Of the information collected, five variables will be used in this analysis for heuristic purposes only. (For a substantive analysis of these data, see Lyons, forthcoming, 1971.) The variables are political position, attitude toward student power, identification with the strikers, attempt to obtain information, and boycotting classes.[2]

To be consistent with Boyle in this analysis, we utilized an ordinal trichotomy, "identification with the strikers" (ID), as an independent variable (coded 0, 1, 2, in the same manner as Boyle's "research choice"),

[2] Information was taken from a 2 percent systematic sample of the student body. The variables are defined as follows: political position (POL): "With respect to other students at the UW, my own political views are: radical left (1), left of center (2), moderate (3), right of center (4), very conservative (5)." Student power (SP): "How important is the cause of enhancing 'student power' to you?: very important (1), important (2), somewhat important (3), unimportant (4)." Identification with strikers (ID): "Regardless of the extent of your active participation in the demonstrations (*a*) did you feel a general identification with the protestors? (*b*) with the anti-strike? *a* only (2), neither *a* nor *b*, or both *a* and *b* (1), *b* only (0)." Attempts to obtain information (INF): "How closely did you follow developments during the first week of demonstrations?: up-to-the-minute (1), at least 4–5 times per day (2), 2–3 times per day (3), about once a day (4), little attention (5)." Boycotting classes (BOYCOTT): "Did you *deliberately* miss any classes at any time out of sympathy to the strike? yes (0), no (1)."

and "attempt to obtain information" (INF) as a dependent variable. Our first analysis uses *ID* as an independent variable operating through its dummies ID_1 and ID_2 (coded ordinally by Boyle's Decomposition I), with no other independent variables in the model. The results are given in figure 1. Three findings are immediately apparent: (1) the empirically derived path-regression (unstandardized) coefficients from *ID* to its dummies are not .50, but rather .569 and .431, respectively; (2) the sum of the two coefficients is 1.0; (3) the effect of *ID* on *INF* is the same whether we assume an equal-interval scale for *ID* or allow it to operate through its dummies. We shall now analyze logically the implications of these empirical findings.

The reason why the coefficients are not .50 is actually very simple.
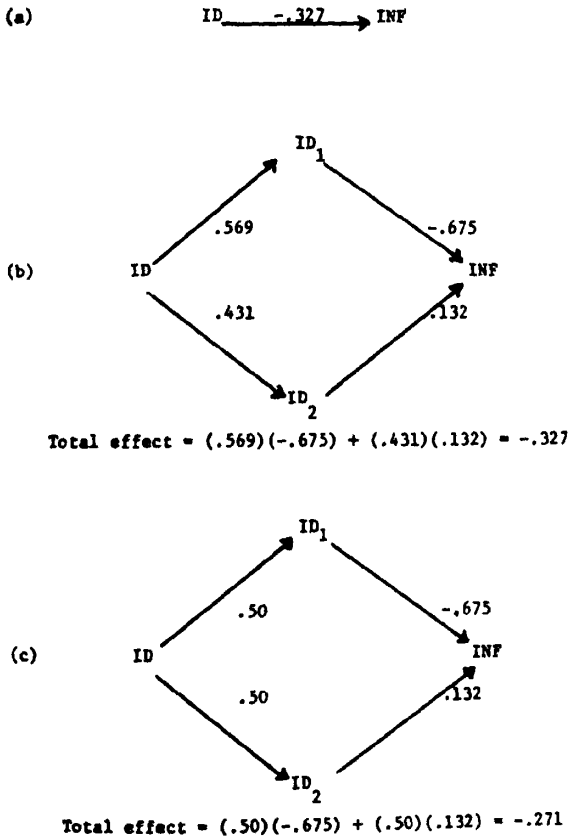
FIG. 1.—Path-regression analysis using dummy variables as independent variables: (a) assuming equal intervals for *ID*; (b) applying empirical path-regression coefficients to paths from *ID* to ID_1 and ID_2; (c) using Boyle's procedure of assigning .50 to paths from *ID* to ID_1 and ID_2.

Since the values of the dummy variables are fixed at 0 or 1 for given values of the parent variable by the method of decomposition, the only source of variation in the regression of either dummy on the parent variable is the relative sizes of the latter's categories (see Appendix A). Figure 2 presents graphically how these path-regression coefficients are obtained. As was stated previously, the true regression of each dum-
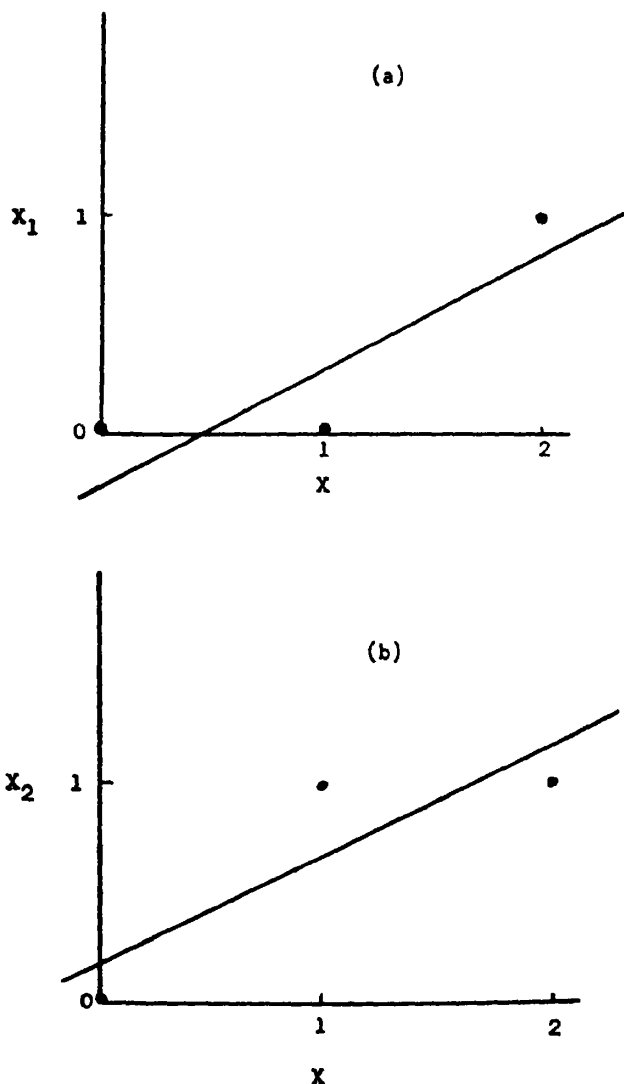
FIG. 2.—Graphic representations of the unstandardized regression of an ordinal decomposition (X_i) on the parent variable (X): (*a*) the regression of X_1 on X; (*b*) the regression of X_2 on X. Each dot represents multiple data points, in this case each representing the same number of observations.

my on its parent variable is nonlinear. The coefficient we obtain, then, is the least-squares estimate of the best-fitting straight line through these points. The regression lines in figure 2 were drawn given the assumption of equal frequencies in each category. To the extent that the category sizes are unequal, the regression line will be pulled toward the points representing the largest number of observations. This is a consequence of the least-squares requirement of minimizing the sum of the squared deviations from the regression line. Given the preceding discussion, we find Boyle's procedure of assigning .50 to the paths in question completely arbitrary and unwarranted.

As we asserted earlier, and as was supported by our second finding, the sum of the paths from the parent variable to its dummies is equal to 1.0. The proof that this must always be the case is relatively simple and is given in Appendix B. In path analytic terms, this situation is illustrated by figure 3. Since $c = d = 1.0$ as a function of the ordinal decomposition procedure, and the regression of a variable on itself must be 1.0, it then follows that $b_1 + b_2 = 1.0$.

The third finding from our analysis is that, in contrast to Boyle, we get the same effect of *ID* on *INF* whether we assume an equal-interval scale for *ID* or allow it to operate through its dummies. However, there is an important difference between our model at this point and the model Boyle presents (though this has no bearing on the previous discussion): we are dealing with the effect of an ordinal variable, through its dummy decomposition, on a dependent variable, with no other independent variables in the model; Boyle's model, on the other hand, controls for the simultaneous effects of other independent variables on the dependent variable. This means that Boyle's estimate of the effect of an ordinal variable through its dummies is, in general, different from the effect that would be calculated in the absence of other independent variables. As we shall illustrate, the meaning of these effects may be markedly differ-
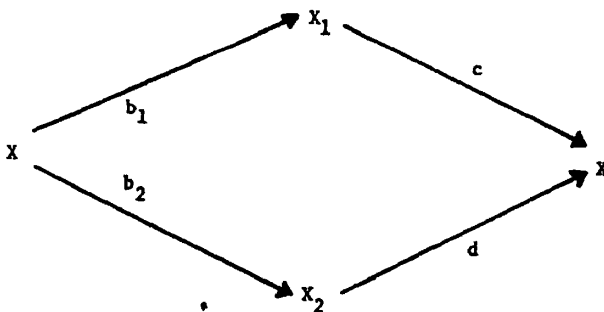
Fig. 3.—Path model for the effect of a variable on itself through its dummy variable decomposition.

ent, depending on the model used. We shall discuss each of these models in turn.

The two models in question are represented in figure 4 by diagram *b* (*Model I*) and diagram *d* (*Model II*—analogous to Boyle's analyses). Since Boyle does not differentiate between these models, we can assume he intends his discussion to be general to both of them. His conclusion that "the operation of adding together paths through dummy variables

Effect of ID through ID1, ID2 = (.554)(-.414) + (.446)(-.064) = -.258

(f) SP .106 ID' -.091 BOYCOTT
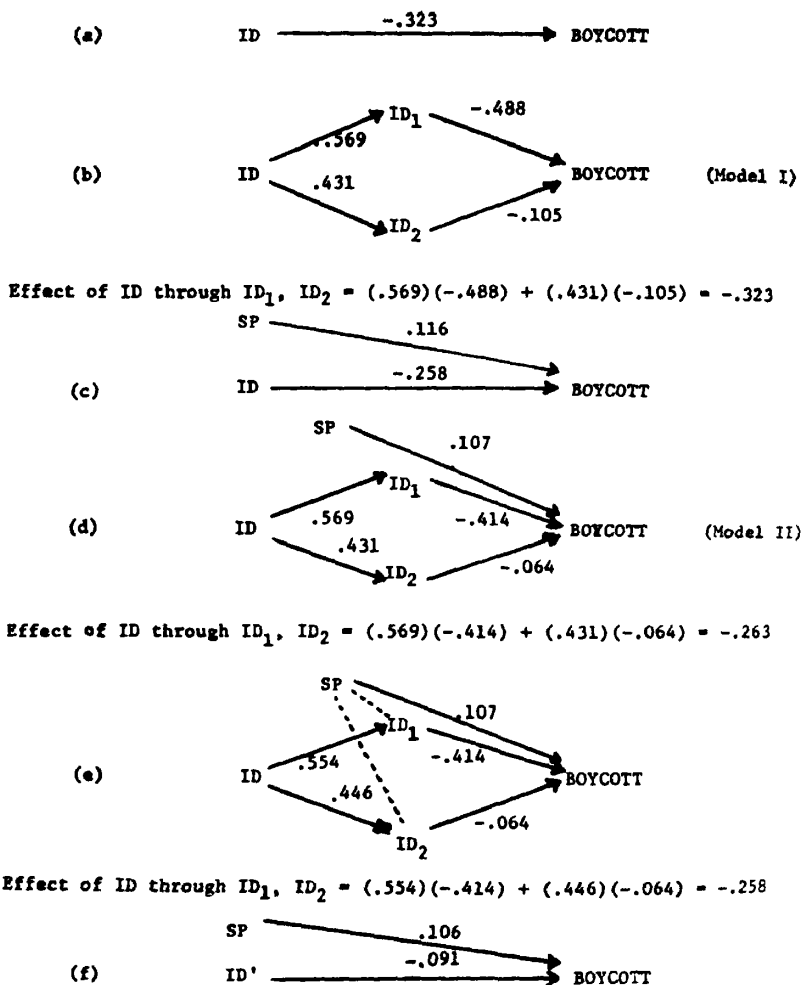
Fig. 4.—Path-regression analyses illustrating the effect of *ID* on *BOYCOTT* (*a*) using *ID* as an interval scale; (*b*) tracing *ID* through its dummies; (*c*) using *ID* as an interval scale with *SP* also effecting *BOYCOTT*; (*d*) tracing *ID* through its dummies with *SP* also effecting *BOYCOTT* (analogous to Boyle's analyses); (*e*) tracing *ID* through its dummies, but with *SP* "effecting" ID_1 and ID_2, as well as *BOYCOTT*, (*f*) using *ID* effect-proportionally rescaled on *BOYCOTT* (*ID'*), with *SP* effecting *BOYCOTT*.

implicitly assumes an effect-proportional interval scale for the parent independent variable" (p. 473), however, is rejected for both models. In contrast to Boyle, we shall show that an ordinal variable's effect in *Model I* is, in fact, an equal-interval effect, not an effect-proportional one, and that its effect in *Model II*, using Boyle's procedure, is neither equal-interval *nor* effect-proportional. Our discussion begins with some general observations on the operation of dummies in *Model I*, and then shows how this is altered for *Model II*. Note that comments refer to unstandardized (path-regression) coefficients only.

Boyle states that by adding the two path products from *ID* through its dummies to *INF*, one obtains the simple arithmetic average of the paths. Further, he asserts that this averaging procedure is equivalent to *straightening* the zigzag line segments. However, rather than the simple arithmetic average of the two paths, the correct procedure yields a *weighted* average—the weights being the empirically derived path-regression coefficients for the regression of each of the dummies on the parent variable, as we have shown above. Note that the two methods give the same result only in the case where these two empirical path-regression coefficients are each .5 (or when the regressions of the dependent variable on each of the dummies are equal). Thus, Boyle's results are distorted to the extent that his category sizes are not equal.

With respect to his second assertion, that the averaging procedure straightens out the zigzag line segments, Boyle is simply incorrect. Neither Boyle's nor our own (weighted) averaging procedure straightens out these segments in any meaningful way. Figure 5 presents graphically the regression of *INF* on *ID* (an example of *Model I*). In this diagram, we present both the zigzag lines (regression segments) and the regression line assuming equal intervals. By taking the regression-weighted average of the two paths from *ID* to *INF* we are, in essence, fitting a straight line to the category means, not straightening out the category means. What our regression-weighting procedure does is weight the regression segments represented by the dummy variables in the same manner as is done automatically when a single regression line is fitted to the means predicted by the parent variable. That is, the presence of the parent variable in the *Model I* path diagram reproduces the linear prediction made in the simple linear or "equal-interval" regression. Thus, when no other independent variables are considered (*Model I*), the effect of an ordinal parent variable is seen to be uneffected by the translation through its dummies—that is, the procedure maintains any nonlinearity in the ordinal variable; it does not rescale the ordinal variable effect proportionally.

This, however, is not the case for *Model II*, where additional independent variables enter into the prediction of the dependent variable.
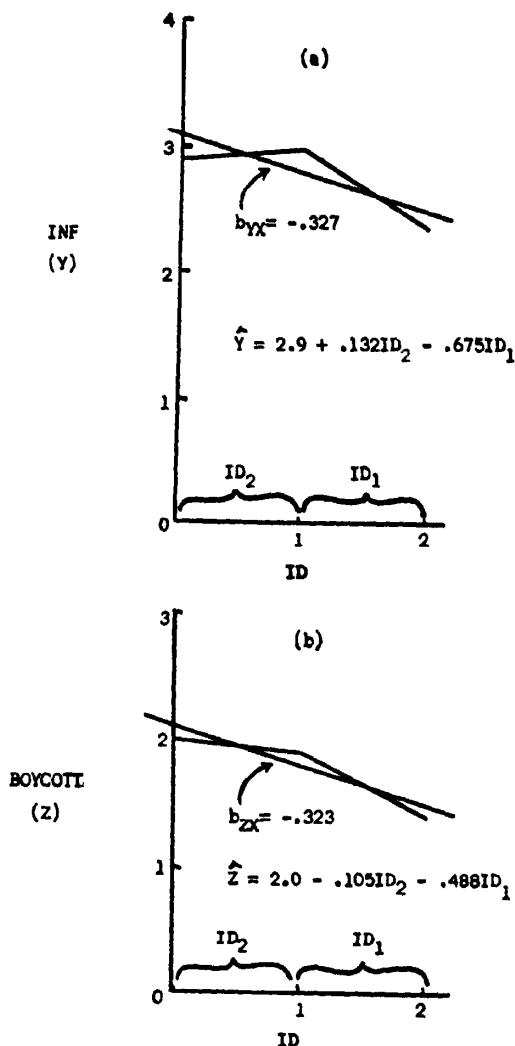
FIG. 5.—Graphic representation of the linear regression of *INF* and *BOYCOTT* on *ID*, also showing the separate effects of ID_1 and ID_2 on *INF* and *BOYCOTT*.

What we wish to reproduce here is not the zero-order interval effect of the parent variable on the dependent variable, but this effect net of the effects of other independent variables in the model. Figure 4 illustrates this concern for our data. We see immediately that we cannot reproduce the net interval effect of *ID* on *BOYCOTT* (diagram *c*) by simply summing the products of the two paths through ID_1 and ID_2 (diagram *d*). The reason for this apparent anomaly is fairly straightforward. To the extent that *ID* and *SP* are correlated, *SP* produces confounding effects

in the system at two points: (1) in the regression of *BOYCOTT* on ID_1 and ID_2, and (2) in the regression of ID_1 and ID_2 on *ID*. However, in diagram *d* we remove only the first source of *SP*s confounding effects. By removing the second source as well (diagram *e*), we are able to reproduce exactly the net interval effect of *ID* on *BOYCOTT*. (The path-regression coefficients from *ID* to ID_1 and ID_2 in diagram *e* are $b_{X_1X \cdot Z}$ and $b_{X_2X \cdot Z}$, respectively.) It is clear that when other independent variables included in the model are *not correlated* with the parent variable, the effect of the parent variable through its dummies is identical with the zero-order interval effect, as in *Model I*. (Appendix C gives proofs for these findings for both *Model I* and *Model II*.)

The additional result from diagram *f* in figure 4 also makes clear that, contrary to Boyle, neither *Model I* nor *Model II* necessarily assumes an effect-proportional scale for the parent independent variable. Boyle evidently failed to realize that he in fact presents data in his article that refute his "effect-proportional" assertion. If his .5 weighting procedure does in fact implicitly assume an effect-proportional scale for the parent variable, as he maintains, then we can expect it to produce an effect equal to the effect obtained by using only the recalibrated parent variable. A comparison of diagrams *a* and *b* in figure 6 (from Boyle's figures 4 and 5*b*, pp. 474, 475) reveals that the effect of his X_4 on X_1, through X_4's dummies, is equal to .307, whereas this result is .204 when he uses the recalibrated X_4.

Interestingly, it *would* be possible for Boyle to "reproduce the equal-
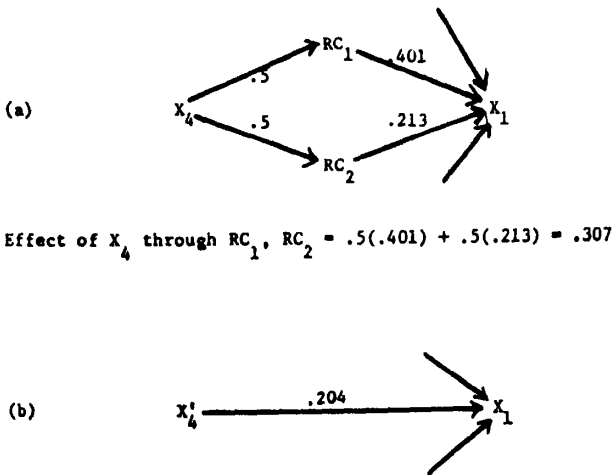
FIG. 6.—Path-regression analyses illustrating the effect of X_4 on X_1; (*a*) using Boyle's procedure of assigning .50 to paths from X_4 to RC_1 and RC_2; (*b*) using X_4 effect-proportionally recalibrated on $X_1 (X_4')$. Unmarked arrows represent other independent variables controlled for.

interval effect," that is, to reproduce its numerical value, by recalibrating his variable X_4. The fact is there is an inexhaustible set of values that may be assigned to the categories of an independent variable, *all* of which represent an acceptable effect-proportional rescaling on a single dependent variable. That is to say, there is an inexhaustible variety of ways to differentially stretch or contract the intervals of the independent variable and still keep their sizes proportional to their effects on some given dependent variable—to straighten out the regression line. This infinite variety of effect-proportional scales is simply the result of the infinite variety of linear transformations one can apply to any given effect-proportional scale, still retaining the same proportional effects.

Table 1 presents four of the possible legitimate effect-proportional recalibrations (straightenings) of *ID* using *BOYCOTT* as the recalibration criterion (cf. fig. 4*b*). Note that only *standardized* (path) coefficients remain unaffected by the specific effect-proportional recoding when *ID'* is used as an independent variable (but that both standardized and unstandardized total effects are stable when *ID'* is used as an intervening variable). This illustrates the fact that *virtually all magnitudes* of *unstandardized* (path-regression) effect-proportional coefficients of the same sign[3] are possible when a single dependent variable is regressed on an independent variable for which it has been used as a recalibration criterion. The point illustrated is that unstandardized coefficients are highly sensitive to metric (the particular rescaling); standardized coef-

TABLE 1

ILLUSTRATIONS OF STANDARDIZED AND UNSTANDARDIZED EFFECTS USING ALTERNATIVE EFFECT-PROPORTIONAL RECALIBRATIONS FOR *ID* (*ID'*) (TWO MODELS)

	ID' → *BOYCOTT*		*POL* → *ID'* → *BOYCOTT*	
CALIBRATION OF *ID'*	Standardized	Unstandardized	Standardized	Unstandardized
a) 0, 1, 2 (*ID*)	−.534	−.323	.261	135
b) 0, 1, 5.6	−.573	− 106	.272	140
c) 0.783, 1, 2	−.573	−.488	.272	140
d) −1, 0, 4.6	−.573	−.106	.272	140
e) −9, 1, 46	−.573	−.011	.272	140

NOTE.—*a* = the original calibration of *ID*; *b*–*e* are alternative versions (linear transformations) of the effect-proportional recording of *ID*, using *BOYCOTT* as the recalibration criterion.

[3] All segments, too, must have the same sign, an important qualification that will be discussed shortly. If all regression segments are of the same sign, that is, if the relationship is monotonically increasing or decreasing, it is possible to keep the required constant proportional sizes among the intervals and produce graphically every arrangement of means from a nearly vertical one (very contracted intervals) to a nearly horizontal one (very expanded intervals) (see table 1 for a partial illustration)

ficients are completely insensitive. So, although Boyle's derived effect necessarily coincides with *one* of the infinitely possible unstandardized effect-proportional outcomes—and so does our technique—it is certainly an arbitrary one and it would make no sense to compare it, as Boyle (incorrectly) asserts he is doing in his figure 4 (p. 474), with other outcomes (e.g., equal-interval effects). In fact, as we have discovered, it makes no sense to speak of "the" unstandardized effect-proportional effect of an independent variable. Given this inherent arbitrariness of metric for effect-proportional rescaling, perhaps the most attractive, though no more or no less interpretable, rescaling is the one that produces an unstandardized zero-order coefficient of 1.0. This rescaling is achieved by simply assigning the predicted (conditional mean) dependent variable values to each of the corresponding independent variable categories.

We stated earlier that rejecting Boyle's assertion regarding the implicit effect of using dummy variables as independent variables has no bearing on his discussion concerning the use of dummy intervening variables. This might seem curious, since Boyle bases his later assertion, in part, on the validity of the former. The key consideration, however, is that *no* procedure which averages the effects of the dummy variables is involved when they are used as intervening variables, though it is possible to "insert" the parent intervening variable, and thus weight the dummies to reproduce exactly the equal-interval effect. This is illustrated in figure 7, where diagrams *a*, *b*, and *c* represent Boyle's procedures and support his assertion that the use of dummy variables as intervening variables is equivalent to using an effect-proportional scale for *ID*. Diagrams *d* and *e*, on the other hand, show how the reinstitution of our (weighted) averaging procedure, by including the parent variable *ID* into the system, essentially transforms the effect-proportional scale for *ID* into an equal-interval scale.

Before concluding this section of our comments, we should point out a circumstance encountered in our analysis, and in Boyle's, that places an important restriction on the procedure of recalibrating into an effect-proportional scale. Returning to our example using *ID* and *INF*, we note (fig. 1) that the effect of ID_1 on *INF* is $-.675$, whereas the effect of ID_2 is $+.132$. What this shows is a *nonmonotonic curvilinear* relationship between *ID* and the variable *INF*. As can be readily seen in figure 4*a*, there is no way to stretch or contract the scaling of *ID* to straighten out the line segments and still preserve the original order inherent in *ID*. In fact, the only way to straighten out the line segments would be first to interpose categories 0 and 1 of *ID* and then to rescale them into an effect-proportional scale—a procedure impossible to justify if one has previously assumed the original order. Note, from Boyle's analysis, that
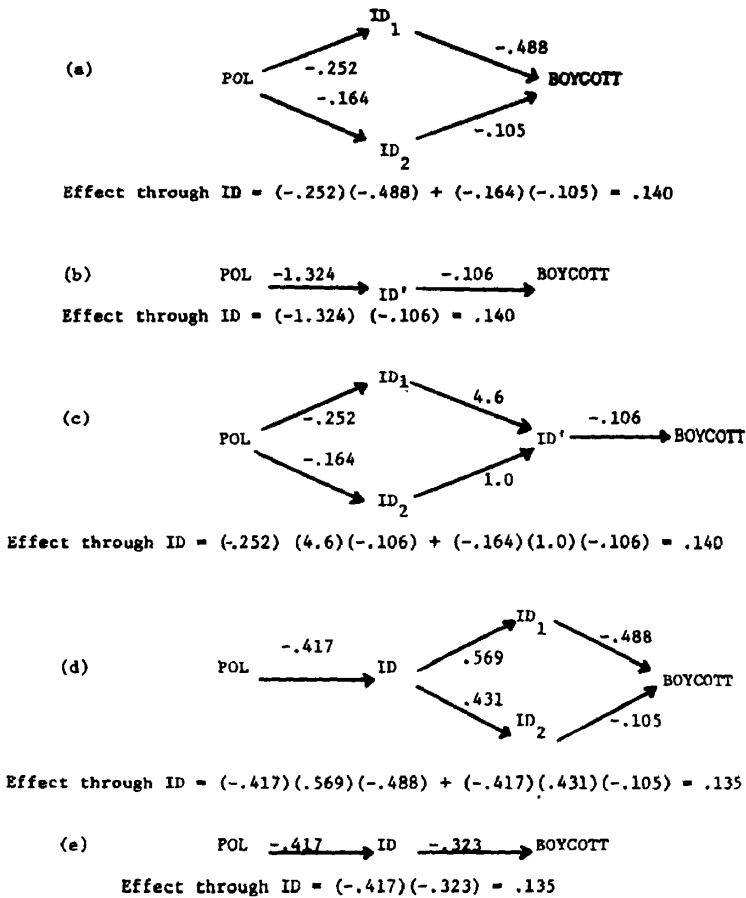
FIG. 7.—Path-regression analyses illustrating the effect of using dummy variables as intervening variables: (*a*) Boyle's using of dummy variables as intervening variables; (*b*) recalibrating *ID* into an effect-proportional scale (*ID'*); (*c*) using dummy variables to determinine *ID'*; (*d*) inserting *ID* to return the effect-proportional result to that of an equal-interval scale for *ID;* and (*e*) using an equal-interval scale for *ID*.

two of the CIS variables (*CE* and *ST*) *are* nonmonotonically related to work alienation in their *net* regression coefficients (see Boyle's fig. 6, p 477). We must assume from the simple fact that Boyle was able to use work alienation as an effect-proportional recalibration criterion for *CE* and *ST* (p. 476) that he did not use these net coefficients to recalibrate, and that this curvilinearity does not exist for the regression of work alienation on either *CE* or *ST* taken separately. This is by no means obvious, however, since Boyle's illustration of the effect-proportional recalibration of *EC* (p. 475) *does* utilize the net coefficients from the regression of work alienation on the full set of CIS variables! We shall make

further observations about Boyle's suggestion for using dummy variables as a guide to recalibration in the final section of this comment.

Concluding this section, we might point out the implication of this discussion for the use of dummy variables in path analysis. Boyle states, correctly, that the use of dummy variables as dependent variables is basically redundant since such use produces an equal-interval scale effect. We find, in opposition to Boyle, that the same may be true for the use of dummy variables as independent variables when the parent variable precedes the dummies,[4] though this is by no means always the case. (At any rate, Boyle's use of dummies as independent variables does not, as he maintains, assure the derivation of a meaningful effect-proportional result.)

It might appear, then, that a dummy variable decomposition contributes to a path analysis only when employed as a set of intervening variables. However, such an assessment would be unjustified. As Boyle's analyses illustrate, a dummy decomposition may be an informative way to dissect the operation of a variable in *any* position in a path model. The result might be the confirmation of an originally assumed equal-interval or linear effect for the parent variable, or it might serve to unmask distortions (e.g., curvilinearity) among the separate effects of the parent variable segments. This latter point (which Boyle also recognizes on p. 479) is intended as a caveat against presuming that for a given set of data "the empirical dangers of assuming equal intervals are not great" (Boyle, p. 461). A more sober conclusion is that we can profit from dummy variable analysis in *finding out* whether the linear assumption for a particular pair of variables is acceptable.

Further Elaborations on the Use of Dummy Variables in Path Analysis

The second part of this comment is not directed at errors in Boyle's paper, but instead examines two important issues regarding the use of dummy variables in path analysis. Both issues, the use of standardized versus unstandardized coefficients, and the use of ordinal versus nominal coding, deserve more attention than they are afforded by Boyle. We also make some observations on the desirability of effect-proportional rescaling as a general analytic technique.

Standardized coefficients.—Curiously, Boyle's only reference to stan-

[4] It should be pointed out explicitly that we are talking about a weighted average of the dummy variable regression coefficients when we speak of the effect of a set of dummy variables on a dependent variable. Our assertion is in no way contradictory to the well-known fact that the R^2 obtained when using dummy variables as a set of predictors in a single equation (and without the parent variable considered) will always be greater than or equal to the R^2 obtained when assuming equal intervals, for each of two parent variables.

dardized path coefficients in relation to dummy variables is his comment that a recalibration based on a dummy variable analysis may change the value of the standardized path coefficient associated with the recalibrated variable (pp. 471, 475). He does not discuss his rationale for using *only* path-regression (unstandardized) coefficients to specify the effects to and from dummy-coded variables, even though much if not most path analyses in the literature utilize standardized coefficients. A justification for Boyle's choice of unstandardized coefficients is actually quite simple, though its implications are important to understand.

A standardized coefficient tells us the predicted standard deviation unit change in the dependent variable for a change of one standard deviation unit in the independent variable, controlling for any other relevant independent variables. This means that the standard deviation of each variable plays a major part in determining the magnitude of a standardized path coefficient. Thus two dummy variables might have equivalent unstandardized paths to some third variable, but, because they have different variances,[5] their standardized paths will not be equivalent.

Ordinal versus nominal coding.—There is an inexhaustible variety of coding schemes for dummy variables,[6] though some of them serve special interpretive purposes better than others. Boyle proposes one of them (Decomposition I, p. 466) for maintaining assumed ordinal distinctions among a set of categories. The more conventional "nominal" coding (Decomposition II), however, is more flexible than might appear. The coefficients produced by regressing a dependent variable on the set of nominal dummy variables are interpreted simply as the difference between the means of the corresponding dummy variables (X categories) and the mean of the omitted X category, which is equal to the intercept value. The important implication of this is that one may readily *rank* these *nominal* categories according to the magnitude and sign of their individual effects *on that dependent variable.* It is then only an easy additional step to derive Boyle's ordinal path-regression coefficients for each dummy, which is done by subtracting from its nominal coefficient the nominal coefficient of the dummy variable ranked immediately below it.[7]

[5] The variance of any dichotomous variable is a simple function of the relative sizes of its two categories; a 50-50 split has the largest variance for a given sample size.

[6] "Any real numbers, positive or negative, whole or fractional, can be used in the coding [of dummy variables] subject only to the nonsingularity constraint, that is, no X_i may have a multiple R of 1.00 with the other independent variables" (Cohen 1968, p. 434).

[7] The intercept value is included in the ranking just above the smallest negative and/or below the smallest positive coefficient (since each coefficient is, again, the deviation of each dummy-represented category from the intercept or mean of the omitted category) and is given the value of zero in the subtraction procedure. The lowest

So just as Boyle suggests the possibility of using an ordinal dummy decomposition to discover the "true" size of one's intervals, one might also use a nominal dummy decomposition to discover the "true" ranking of a set of nominal categories, though both of these procedures can be highly questionable and make severe theoretical demands on the particular dependent variable used to obtain the ranking or interval sizes.

A final caution in the use of either nominal or ordinal dummy coding, not mentioned by Boyle, is that the size of the omitted category must be "sufficiently large" or the solution is likely to be quite unstable—or there may be no solution obtainable because of the singularity produced among the other categories. This is often a small-sample problem, but it may be particularly troublesome for the ordinal coding scheme, which requires that the lowest (or highest) ranking category be omitted, and these categories are often the small tails of distributions containing more than a very few categories.

The Desirability of Effect-proportional Recalibration

Boyle advises us that we should avoid "as long as possible" *any* assumptions about the interval properties of underlying "true" scales (p. 465)—assumptions made explicit in the reconstruction of variables to make them effect-proportional. He also points out "the possibility that the effect-proportional scale implied by one dependent variable may not be the same as the one implied by another dependent variable," and notes that this may be due either to measurement error or to actual nonlinear relationships with one or both dependent variables (p. 465). It should be added that nonsystematic, nonrandom measurement error in the *dependent* variable (not discussed by Boyle) and sampling error might also contribute to an unwarranted effect-proportional rescaling. But even apart from these problems, a good rationale for the general use of effect-proportional recalibration is difficult to formulate.

Effect-proportional recalibration is a form of data transformation based on bivariate information, and it has a very straightforward justification in the special case where one uses it to calibrate on a dependent variable taken to be *the* criterion variable of interest. For example, one might wish to calibrate a set of religious denominations so that the resulting scale has a linear relationship with some scale of conservative-to-liberal religious attitudes that is well distributed and known to be reliable. This would avoid entirely any assumptions about underlying "true" scales and attendant problems of multiple dependent variable criteria.

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coefficient serves as a base, and specifies the new omitted category, as in Boyle's illustration of the ordinal scheme.

Univariate transformations.—For other problems involving the appropriate scaling for measures, an alternative and in many cases perhaps more reasonable admonition is to attend first to *univariate* rather than *bivariate* distributional problems. For example, we know the distortions that may be associated with using highly skewed or bimodal distributions in correlation and regression analyses (Blalock 1960, p. 290), but such measures can easily be "corrected" through simple univariate area transformations (recalibration). Furthermore, many variables of interest can be conceptualized as having something between normal and flat underlying distributions, and if we can represent them as such empirically, the problem of finding true interval sizes has been solved: our intervals can be expressed as standard deviation units, which of course are all equivalent with reference to the parent distribution (Borgatta 1968). Bivariate irregularities between well-constructed univariate measures could then be treated as findings and not troublesome aberrations.

Focusing attention on univariate distributions has its own demands, of course, but they are far more practically dealt with than the problem of finding "true" scales through effect-proportional transformations. Boyle's seemingly casual prescription of effect-proportional scaling as an alternative procedure (even though he disavows it as a foolproof technique for finding true scales (p. 476)) is viewed with a great deal of caution. Rather than exert our energies being concerned about "true" scales for simple measures, it is probably more reasonable in most cases to attend to the building of univariate distributions with desirable empirical properties (form, precision, reliability, validity). This is in part a plea for a bit more of the "raw empiricism" associated with the construction of adequate measures, and a bit less of the "raw mysticism" attending the search for true scales for items of unknown quality.

Summary

The primary concern of this comment has been an attempt to correct some statistical mistakes in Boyle's paper. Specifically, a number of points have been made relative to the appropriate use of dummy variables in path analysis. First, the use of dichotomous variables as dependent variables in a regression equation may create distortions in the resulting regression estimates—a problem that, it is suggested, may be effectively handled with certain techniques used by econometricians. Second, Boyle's use of .50 as the effect from a trichotomous parent variable to each of its two ordinally coded dummies is shown to be completely arbitrary. The correct solution is to use, instead, the empirical regression coefficients. Third, Boyle comes to the false conclusion that utilization of

dummy variables as independent variables (including the parent variable in the analysis) implicitly assumes an effect-proportional scale for the parent variable. We have shown that, to the contrary, such a procedure, when correctly performed, assumes an equal-interval scale for the parent variable. Finally, after some observations on the use of standardized coefficients and the flexibility of nominally coded dummies, we have cautioned against an uncritical acceptance of effect-proportional recalibration as a technique for discovering "true" scales. In so doing, we have suggested that the use of simple univariate transformations may be generally a more justifiable approach to calibration problems.

APPENDIX A

That the regression of either dummy on the parent variable is a function of the relative sizes of the three categories of the parent variable can easily be seen by rewriting the algebraic equations for the path-regression coefficients. In the general case, this coefficient may be expressed as:

$$b_{YX} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}\,. \tag{A1}$$

Given that individuals characterized by 0, 1, and 2 on ID will be characterized by 0, 0, and 1 on ID_1 and by 0, 1, and 1 on ID_2 (see fig. 2), equation (1) reduces to:

$$b_{ID_1ID} = \frac{n_1(n_2 + 2n_3)}{n_1(n_2 + 4n_3) + n_2n_3}\,;$$
$$b_{ID_2ID} = \frac{n_3(2n_1 + n_2)}{n_1(n_2 + 4n_3) + n_2n_3}\,, \tag{A2}$$

where n_1 = number of observations for $ID = 2$; n_2 = number of observations for $ID = 1$; and n_3 = number of observations for $ID = 0$ (the omitted category). It is clear, then, that the *relative sizes* of the categories of ID determine the values of the path-regression coefficients. Further, these two coefficients will equal .50, in the case of the trichotomy, when either the category sizes are equal or $n_1 = n_3$. (This does not generalize to parent variables with more than three categories.) This is seen by setting $n_1 = n_2 = n_3$, and rewriting the equations as follows:

$$b_{ID_1ID} = \frac{n(3n)}{n(5n) + n^2} = \frac{3n^2}{6n^2} = .50\,;$$
$$b_{ID_2ID} = \frac{n(3n)}{n(5n) + n^2} = \frac{3n^2}{6n^2} = .50\,. \tag{A3}$$

APPENDIX B

Given a parent variable X (trichotomous in this example) and its two ordinally coded dummies X_1 and X_2, we may write the structural equations for X_1 and X_2 as follows:

$$\begin{aligned} X_1 &= a_1 + b_1 X + e_1 \\ X_2 &= a_2 + b_2 X + e_2 . \end{aligned} \tag{B1}$$

Further, given that $X = X_1 + X_2$, as a consequence of the decomposition procedure, we may write:[8]

$$X = (a_1 + a_2) + (b_1 + b_2)X + (e_1 + e_2) . \tag{B2}$$

Since the coefficients of the same power of X must be equal on both sides of the equation (Taylor 1955, p. 613), we have $(1.0)X = (b_1 + b_2)X$, or $1.0 = b_1 + b_2$. This proof easily generalizes for the parent variables with more than three categories, given the ordinal decomposition.

APPENDIX C

We have asserted from empirical findings (e.g., fig. 1, diagrams *a* and *b*) that the following identity holds when the effect of a parent variable (X) is traced through its dummies (X_1 and X_2) to some dependent variable (Y), when there are no other independent variables in the model (Model I):[9]

$$b_{YX} = b_{YX_1 \cdot X_2} b_{X_1 X} + b_{YX_2 \cdot X_1} b_{X_2 X} . \tag{C1}$$

Since $X = X_1 + X_2$ as a consequence of the ordinal decomposition procedure, we may write the equations for the required regression coefficients as follows (where C_{ij} = Covariance of i and j; V_i = Variance of i):

$$b_{YX} = \frac{C_{XY}}{V_X} = \frac{C_{X_1 Y} + C_{X_2 Y}}{V_X} ; \tag{C2}$$

$$b_{X_1 X} = \frac{C_{X_1 X}}{V_X} = \frac{C_{X_1 X_2} + V_{X_1}}{V_X} ; \tag{C3}$$

$$b_{X_2 X} = \frac{C_{X_2 X}}{V_X} = \frac{C_{X_1 X_2} + V_{X_2}}{V_X} , \tag{C4}$$

$$b_{YX_1 \cdot X_2} = \frac{V_{X_2} C_{X_1 Y} - C_{X_1 X_2} C_{X_2 Y}}{V_{X_1} V_{X_2} - (C_{X_1 X_2})^2} , \tag{C5}$$

$$b_{YX_2 \cdot X_1} = \frac{V_{X_1} C_{X_2 Y} - C_{X_1 X_2} C_{X_1 Y}}{V_{X_1} V_{X_2} - (C_{X_1 X_2})^2} . \tag{C6}$$

[8] We are indebted to Seymour Spilerman for suggesting this proof to us.

[9] We are indebted to Arthur S. Goldberger for suggesting these proofs to us.

Thus, in order to show that formula (C1) holds, it is sufficient to show that the following holds:

$$\frac{C_{X_1Y} + C_{X_2Y}}{V_X} = \left(\frac{V_{X_2}C_{X_1Y} - C_{X_1X_2}C_{X_2Y}}{V_{X_1}V_{X_2} - (C_{X_1X_2})^2}\right)\left(\frac{C_{X_1X_2} + V_{X_1}}{V_X}\right) + \left(\frac{V_{X_1}C_{X_2Y} - C_{X_1X_2}C_{X_1Y}}{V_{X_1}V_{X_2} - (C_{X_1X_2})^2}\right)\left(\frac{C_{X_1X_2} + V_{X_2}}{V_X}\right). \tag{C7}$$

Canceling V_X from formula (C7) yields:

$$C_{X_1Y} + C_{X_2Y} = \frac{(V_{X_2}C_{X_1Y} - C_{X_1X_2}C_{X_2Y})(C_{X_1X_2} + V_{X_1}) + (V_{X_1}C_{X_2Y} - C_{X_1X_2}C_{X_1Y})(C_{X_1X_2} + V_{X_2})}{V_{X_1}V_{X_2} - (C_{X_1X_2})^2}. \tag{C8}$$

Multiplying through the numerator and simplifying, we get:

$$C_{X_1Y} + C_{X_2Y} = \frac{C_{X_1Y}[V_{X_1}V_{X_2} - (C_{X_1X_2})^2] + C_{X_2Y}[V_{X_1}V_{X_2} - (C_{X_1X_2})^2]}{V_{X_1}V_{X_2} - (C_{X_1X_2})^2}. \tag{C9}$$

Thus,

$$C_{X_1Y} + C_{X_2Y} = C_{X_1Y} + C_{X_2Y}. \tag{C10}$$

For *Model II* (illustrated by including an additional independent variable [Z] in *Model I*), we found from our data that the following was true:

$$b_{YX\cdot Z} \neq b_{YX_1\cdot X_2Z}b_{X_1X} + b_{YX_2\cdot X_1Z}b_{X_2X}. \tag{C11}$$

The problem is determining what $b_{YX\cdot Z}$ is in fact equal to when the dummies of X are included in the model. Operating with the full model, we may express $b_{YX\cdot Z}$ and $b_{YZ\cdot X}$ (see fig. 4, diagram *e*) in the following matrix notation (Goldberger 1968, chap. 3):

$$\begin{bmatrix} b_{YX\cdot Z} \\ b_{YZ\cdot X} \end{bmatrix} = \begin{bmatrix} b_{X_1X\cdot Z} & b_{X_2X\cdot Z} & b_{ZX\cdot Z} \\ b_{X_1Z\cdot X} & b_{X_2Z\cdot X} & b_{ZZ\cdot X} \end{bmatrix} \begin{bmatrix} b_{YX_1\cdot X_2Z} \\ b_{YX_2\cdot X_1Z} \\ b_{YZ\cdot X_1X_2} \end{bmatrix}. \tag{C12}$$

Multiplying these matrixes, and taking into account that, by definition, $b_{ZX\cdot Z} = 0$ and $b_{ZZ\cdot X} = 1$, we obtain the two equations:

$$\begin{aligned} b_{YX\cdot Z} &= b_{X_1X\cdot Z}b_{YX_1\cdot X_2Z} + b_{X_2X\cdot Z}b_{YX_2\cdot X_1Z}; \\ b_{YZ\cdot X} &= b_{X_1Z\cdot X}b_{YX_1\cdot X_2Z} + b_{X_2Z\cdot X}b_{YX_2\cdot X_1Z} + b_{YZ\cdot X_1X_2}. \end{aligned} \tag{C13}$$

Thus, the inequality in formula (C11) occurs to the extent that X and Z are correlated, which has the effect of making $b_{X_1X} \neq b_{X_1X \cdot Z}$ and $b_{X_2X} \neq b_{X_2X \cdot Z}$.

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REJOINDER TO WERTS AND LINN, LYONS AND CARTER

I feel a little strange writing a rejoinder to comments on a paper which I wrote two years ago and have lost interest in since. From my perspective, sociology today is imploding and exploding in a turmoil of underlying energy forces as potent and conflicting as what is going on in American society today. Path analysis, and the potential implicit in that technique, is one part of this turbulence. The comments generated by my paper help clarify just what this potential is.

The Werts-Linn paper stands by itself—I can only give it a pat on the back. The use of multiple indicators to get at underlying theoretical variables has been accepted for some time. The paper shows how this can be incorporated directly into the system of analysis and in doing so opens new possibilities for surmounting the measurement problems which are inherent in most of our data collection techniques, particularly questionnaires and interviews.

Lyons and Carter probe more directly into the contents of my paper. I will limit myself to the following remarks: (1) I was clearly in error in stating that the regression determination of dummy variables by their

(trichotomous) parent is .50. This was first pointed out to me by Neil Henry, who also concluded that the .50 figure works when only the two extreme categories have equal N. (2) Concerning the effect of an independent variable on a dependent variable via its dummies: my constant reference to effect-proportional scaling is overly mystical. In this case, since effect-proportional scaling means straightening out the zigzag regression line by moving around the boundaries of the intermediate categories (and assuming monotonicity), the slope of the new, straight line is determined beforehand by the means of the two extreme categories. This is also what is accomplished by taking the simple average of the dummy variable b's; hence this procedure "implicitly assumes effect-proportional scaling." If the category N's are equal, the *slopes* of the equal-interval and effect-proportional regression lines are the same. But letting the extreme categories determine the regression line is obviously undesirable. My discussion to this point in the paper was intended only to prepare the logic for considering the more interesting, and practical, case of dummy variables serving as intervening variables, with their parents removed from the system. (3) In stating that adding paths through dummy variables implies effect-proportional scaling, I am really saying that doing this gives the same results as recalibrating category boundaries *within the scale range* determined by the two extreme categories. In figure 6 of the Lyons and Carter paper, and the discussion of it, the rescaling I did was, for convenience, different from this. An equal-intervals scale was assigned to X_4 (Research Choice) in the obvious way, 0, 1, and 2. However, since the effects of the dummy variables RC_1 and RC_2 on X_1 were .401 and .213, respectively, an effect-proportional scale was assigned as 0, 2, and 3. Since unstandardized b's depend on scale range, the effect of the effect-proportional X_4 should be two-thirds the size of the original X_4 acting through its dummies. This is in fact true, as Lyons and Carter show. I continue to assert, therefore, that combining paths through intervening dummy variables gives results equivalent to effect-proportional scaling, with scale range taken into account. Since the "weights" used in this "averaging" operation are determined by the effects of other independent variables on the intervening variables, I also continue to believe that this is an alternative path analysis to assuming equal intervals and hence useful as a check on possible distortions. Note that the effect of such an independent variable on one of the set of dummies is in no direct way influenced by the category N's of the parent of the dummy variables, and that hence the logic remains consistent with the (unfortunate) assumption of .50 in the earlier case.

The remainder of the Lyons and Carter paper provides useful elaboration of some of the complexities involved in using path analysis for sociological data. It is a highly sophisticated technique which is at the same

time applicable to a wide range of traditional sociological data analysis For me, one of the most immediate lessons is how crude our data are and how puny our efforts at learning from these data have been. There is a direct and unavoidable line of descent from cross-classification tables to path analysis to representation of theory in terms of systems of simultaneous equations, and it is toward this point that functional and systems theories converge. To do this well, I think we have to sit down to the intensive study of a relatively small number of reliably and uniformly measured variables. At the same time, I have more and more conviction that for most sociological problems, rather than move ahead toward this level of sophistication, we ought to be moving backward to a real reassessment of what it is that we are trying to do. Most applications of quantitative methodology, especially to exploratory or psychological (attitudinal) problems, seem to me an almost complete waste of time.

What fascinates me the most about path analysis is the way it makes explicit, and immediately artificial, the assumptions upon which sociology has been based for a long time. It is a mechanistic, linear thought structure—this is a classification and not a value judgment, because it can work very well for some things. If things in the world cannot be understood in terms of it, they will keep on happening in spite of not being understood. But I am happy that there is much more happening in (and out of) sociology, than developments such as path analysis.

RICHARD BOYLE

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REISS COMMENTS ON SELBYG'S REVIEW OF ZETTERBERG

In Arne Selbyg's review of Hans Zetterberg's recent book on sexuality in Sweden (November 1970), one or two statements concerned me and I would like to make a few comments. The reviewer states (p. 534), "It is the first study of sexual behavior where statistically satisfactory conclusions can be made about the whole population of a country." This is not quite true. I conducted a study of the United States adult population twenty-one years of age and over in a probability type sample drawn for me by the National Opinion Research Center. I published a book on the results of this study under the title *The Social Context of Premarital Sexual Permissiveness*. This sample was generally representative of the American adult population, and thus, the Zetterberg study is not the first such study. I might also mention that there are other studies with very broadly based samples, such as Michael Scofield's English study published in 1965.

One other point: on page 535 the reviewer states, "In most other countries, including the United States, a study like this could not be done as satisfactorily at the present time. There would be too much resistance from pressure groups, and the material would be biased by nonresponse from many groups." This, too, I think is an overstatement. My own experience has been that, if you make your respondents aware of the fact that you are not morally judging them, that they will be anonymous and that the project has some scientific value, then the problem often is turning people off, not turning them on. Refusal rates under such professional interviewing conditions have been rather low. I might note here that some of the national population researches also have reported such low refusal rates on sexual conduct questions relating to contraception and intercourse. The 1959 Freedman, Whelpton, and Campbell book *Family Planning, Sterility, and Population Growth* make mention of this. The authors, on page 14 of that book, report a low refusal rate in questions related to sex: "Of the 2,713 wives who were interviewed, only 10 (less than ½ of 1 percent) were unwilling to answer the questions about their attempts to avoid conception. This is less than the refusal rate for questions about income." Note that this study was done in the 1950s.

In short, I think the reviewer misrepresents to some extent the state of recent studies in the area of sexual relationships and the willingness of the American population to talk about such things. To leave such statements without comment is possibly to mislead your readership, and I have therefore written this brief letter.

IRA L. REISS

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SELBYG REPLIES

I regret to say that Professor Reiss is wrong when he states that his own study measures up to my statement about Zetterberg. Zetterberg put all his questions to a probability sample of the Swedish adult population. Although one of the samples used by Reiss was a national probability sample, the respondents were not asked about their sexual behavior, only about their sexual attitudes. The questions about sexual behavior in the Reiss study were only given to a nonrandom sample of white students from one college in Iowa (later "checked" by drawing a larger sample from an even more limited population). Reiss may thus have been the first to use a national probability sample to study attitudes toward premarital sex, but as a study of sexual behavior it falls far short of Zetterberg's.

The Scofield study was based on a sample of youth fifteen to nineteen

years old in three English cities. It was thus broadly based compared with some studies, but not when compared with Zetterberg's.

On the other point taken up by Reiss, I acknowledge, of course, that I speculate. Perhaps I should have added "I believe" or something like that to the sentences quoted. One of the bases for such a belief is Reiss's remarks on pages 10–11 of his book: "Although behavior is dealt with in this study, it was decided to focus more on the measurement of attitudes than on behavior. First, it was assumed (and this proved to be the case) that resistance to asking behavioral questions of young people would occur among high school principals in some of the samples. Secondly, it was assumed that less deception would be attempted concerning questions of attitude. Third. . . . Fourth. . . ."

I understand his present remarks to mean that he was wrong then, or that things have changed so that neither pressure groups such as high school principals nor nonresponses or deceptive responses would be a deterrent for such a study today. Personally, I am afraid these problems are still with us.

They are especially relevant here since Zetterberg studies the most intimate aspects of sexual behavior. In the questionnaire, there are questions on the time and circumstances of first sexual intercourse, frequency of intercourse during the last month, positions used, the circumstances and satisfaction, the first partner, the total number of partners, homosexual and lesbian activity, and many other items. Personally, I think he went too far, but that is another matter. The point here is that the response rates in studies focusing on population planning may not be very relevant. Therefore, I am not convinced that the remarks in my review were an overstatement. But I certainly hope so, and it is up to those who believe that they were to prove it by doing such a study.

Arne Selbyg

Norsk Institute for By-Og Regionforskning and University of Chicago

Book Reviews

The Political Sciences: General Principles of Selection in Social Science and History. By Hugh Stretton. New York: Basic Books, 1969. Pp. xii+453. $10.00.

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This is a brilliant book. It uses an excellent exposition of true component ideas to construct an overall argument that seems wrong to me. Stretton's central argument is (p. 262): "[Social science] must be persuaded to stop indoctrinating its recruits with the peculiarly stupid ideas of generality, objectivity, and cumulation." I therefore feel a conflict between the role of a reviewer, which obliges me to write an essay about why you should read the book, and the role of citizen in the republic of science, which obliges me to answer especially the opposition that is most nearly sound. I will try to discharge my reviewer function as fast as I can, in order to smuggle a bit of serious debate into the review pages where it does not belong.

The central argument is built of three components: (1) The people in a social science explanation should act like the people you and I know, except perhaps for being in a different situation and having learned different things about the world and about what is a valuable life in the world. We are more likely to have such an accurate picture of them if we study them in detail than if we apply general laws to them. I will call this the "*verstehen*-historicist" principle. (2) Social causation is a seamless web, and you can therefore follow the threads as far as you want. How far a man follows them before he says, "Aha, that's it!" is determined by nonscientific considerations. If these nonscientific considerations are a sophisticated value position, the work will be more valuable. Examples of cutting the web at a point determined by values are Lenin's "Aha, Martov and Kautsky and other democratic socialists are to blame for the continuation of the imperialist war" (see below) or Hugh Stretton's own tracing of sociologists' bad writing to the philosophy of science that he does not like (see pp. 148 and 181, and a lovely bitter example on p. 299). I will call this the "explanations cut to fit" principle. (3) Men often use the fact that they have made a study conforming to an ideal of a quantitative generalizing science as an excuse for not having succeeded in explaining something. Though the patient dies, the operations followed the canons of science. I will call this the "lots of stupidity in your camp" principle.

These principles are true, of course. They are very similar to the principles behind David Matza's *Becoming Deviant* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969). The "*versteher*-historicist" principle Matza calls "naturalism" (pp. 1–10). The "explanations cut to fit" principle

Matza speaks of as "becoming more or less one-eyed" (p. 143). The "lots of stupidity in your camp" principle Matza manages by putting his positivist opponents at an earlier stage of development of the discipline. I am then reviewing an exemplar of a general movement.

Further, Stretton exemplifies his argument with telling formulations of the structure of people's thought, for example, this perfect characterization of Leninism: "not how to contrive revolutions which would otherwise fail, but how to lead revolutions which would otherwise be led by others" (p. 40). Or after describing Bernhard von Bülow's imagery of military Prussia as male and democratic South and West Germany as female, he describes von Bülow's policy of isolating the Social Democrats by foreign-policy "tensions, but without serious territorial ambitions and without actual war. An irritating condition of permanent tumescence" (p. 84). Or his description of Talcott Parsons's strategy: "He gambles for general truths by the method of insisting on the generality, then seeing what truths can be found there. If sufficiently useful truths were found, they might indeed be more powerful than anybody else's" (p. 293). These brilliant characterizations and argument are applied mainly to the theory of capitalist imperialism, which is almost as relevant to our lives as Matza's marijuana use.

Perhaps I can illustrate my doubts by the cases of Hobson and Lenin Stretton finds that they chose out of the seamless web causation of imperialism in the light of their values and purposes. So far so good. But Hobson traced back mainly along a causal thread that is not there: it is not true that a necessity to find a place to put extra capital for which there was no profitable outlet in Europe caused imperialism. (Stretton says this, and I agree; see p. 123 and p. 436, n. 13.) To this false economic theory, Lenin added a false theory of why democratic socialists supported national governments in war more than did left socialists (I don't know what the right theory is, but Lenin's is clearly wrong) and an irresponsible identification of pacifism as opportunism (pp 110–13). Are these supposed to be examples of how it helps us to cut our argument to fit our values? It seems to me, rather, to illustrate how easily arguments fit into aesthetic and "relevant" wholes for the simple-minded if you can make it all up. Fiction has higher relevance to the life of the simple soul, because an accurate picture of reality does not lead to certainty in action or to a clear allocation of praise and blame.

Stretton would agree that social science should not be simpleminded propaganda, for he talks of the dialectical relation between radical values and research (pp. 139–40), and in describing Lenin's misrepresentation of his friend Martov, he comes very close to calling Lenin a liar (p. 113). But when he comes to the second part of his book, "Truth," he drops these value-oriented studies to poke at Merton's theory of political bosses. He does not show that Merton's theory is wrong, but only that he (Stretton) would not have written about it in the language of latent functions and would have studied Jersey City as a unique historical product. Matza says that Merton's explanation comes down to the observation

that a political machine is a good racket, which seems to me much more destructive than anything Stretton says. In short, we have false theories praised for value relevance and (as far as we know) true theories blamed for scientific pretensions.

A social science theory is in part a theory of what people are up to, in part a theory of what situations they will be acting in, and in part a theory about how the resulting actions create new motives and new situations of action, giving a systemic quality to the whole. The part about how people act will work better the more the people in the theory behave the way real people behave. Thus, social science theories should be naturalistic, in the sense that the models of men they use have to have the mechanisms in them analogous to those in real men.

We all have more or less inchoate theories of what men are like and what makes them go. These inchoate theories are very often better than our formal theories, so we do better recreating a man who supported the Boer war (Stretton spends a lot of time on Joseph Chamberlain, a social reformer turned imperialist around the turn of the century in England) by "interpreting" his life than by "testing a theory of imperialism." But as Stretton says, "Anthropology, sociology, and political science . . . differ from history in their efforts to formulate their general knowledge, but not really in the *kind* of knowledge they can expect to accumulate" (p. 212). I would put it, rather, that the social sciences take responsibility for the truth of the theories they use, while historians typically only take responsibility for their plausibility. Naturally then, social scientists fail more often, and look more ridiculous when they fail because of their pretensions. The chief advantage of history in being value-relevant is that it allows the simpleminded to generalize without examining the generalization.

The more general one can make a notion of how a class of men work, the more relevant it is to our values. The reason we feel illuminated when we read of von Bülow's isolating the Left from the middle class by a tumescent foreign policy is that we suspect that it might be what a lot of monarchist-feudal foreign ministers of Germany, or a lot of right-wing foreign ministers of Germany, or a lot of right-wing foreign ministers of capitalist countries with strong socialist oppositions, or a lot of right-wing foreign ministers, would do. And perhaps, once tumescent, they cannot stop themselves from rape.

The romantic radical moves immediately from von Bülow to Rogers. There are two alternative nonsentimentalist strategies. One is to try to generalize about conservatism and aggression by reconstructing the general features of the world view of conservatives, the situations they find themselves in, and the alternative strategies for dealing with them; the other is to study Rogers in detail. To generalize successfully about foreign ministers without loss of precision would be a great, and perhaps unlikely, achievement. But guessing what Rogers will do by studying him in detail is only a slightly better bet.

A model or picture about how men work may be formulated in less or

more general terms. It is an achievement to move from a more concrete formulation of how particular men in particular situations work to a formulation of how a class of men in a class of situations work, without losing the precision of particularity. Stretton is right that we social scientists have an occupational psychosis of mistaking vagueness for generality. But when this achievement is made, it helps future historians interpret particular cases *and also* has quantitative consequences for the behavior of that class of people in that class of situations.

Paul Lazarsfeld has been as much engaged in *verstehen* as Max Weber, though he is not as good at it. But not being as good as Weber is a common condition that distinguishes Lazarsfeld from very few living historians. If Lazarsfeld does not understand rightly what goes on in the minds of Erie County voters, they will not, statistically speaking, change their minds when he thinks they should. The idea that there is something inherently external, nonsubjective, or inhumane about a number is false. This false identification of history with *verstehen*, or a correct perception of what is in men's minds, and quantitative general social science with objectivism both flatters historians unduly and underestimates quantitative social scientists. Stretton builds his case in large part by quoting generalizing works that try to create generality by incantation rather than research; he uses David Easton rather than S. M. Lipset, M. Trow, and J. S. Coleman's *Union Democracy* (New York: Free Press, 1954) to show how theories of political systems are fruitless.

I do not object, then, to Stretton's persuasive argument that the social sciences ought to be more humble about their achievements of generality and value-relevance, especially in relation to our capacity to tell people how to achieve their (and our) values in the social world. What I do object to is generalizing and quantitative science doing all of the "being humble." It is, after all, not a quantitative social scientist with too much aspiration to generality of whom Stretton says "all definitions in Chapter One reappear as conclusions in Chapter Nine" (p. 127). Stretton needs to notice that not all historians are Elie Halévy, E. H. Carr, or Max Weber

International Community Power Structures: Comparative Studies in Four World Cities. By Delbert C. Miller. Bloomington: Indiana University Press, 1970. Pp. xx+320. $11.50.

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This volume contains much of the collected work of Delbert C. Miller on community power structure from 1953 to 1970. Generally, it attempts to integrate his research on four large cities in four separate countries Readers familiar with this literature will recall Miller's work in Seattle and in Bristol, England. In this book he has added material on Cordoba.

Argentina, and Lima, Peru, endeavoring at the same time to further develop his concepts, methods, and comparative generalizations.

With these objectives in mind, Miller describes influence patterns—or, more specifically, how institutional sectors and influential people are ranked—in the four cities. In the more familiar cases of Seattle and Bristol, he finds certain similarities. Imaging a continuum from a "highly stratified pyramid dominated by a small but powerful business group functioning through cliques of high solidarity" (p. 80) to a "ring or cone model" whereby there is no single elite or dominance by a single institutional sector, Seattle would fall somewhere near the middle, with Bristol toward the end. In both cities, business, labor, education, government, and the professions are important, although they occupy different slices of the ring or cone. The most important contrasts between these two cities include the higher status accorded businessmen in Seattle and the more representative city government in Bristol.

The Latin cities provide an interesting contrast. Cordoba was under military government at the time of the study and also has a strong Catholic tradition. Accordingly, the military and church were important institutional sectors but, curiously, contributed few of the "influentials" identified by Miller's technique. In an interesting discussion of this "slippage" (pp. 122–28), Miller explains that church and military operate without representatives in particular local activities so as not to be picked up by this technique. In fact, this arena is populated by people from business, government, education, and the political parties, such that Cordoba, "like Bristol and Seattle, fits an institutional ring power model" (p. 128). If the reader begins to expect a pattern, he is not disappointed by Lima, which, despite local-national leadership convergences, a history of military coups, and rumored oligarchies, is salvaged by the congenial model. Important sectors include government, business, political parties, and, to a lesser extent, the church, military, and labor. Because these sectors and their representatives fail to engage in collective action, Miller concludes that the leadership structure is fragmented, belying the thesis of oligarchy or a stratified pyramid. His most general observation is, "It may be concluded then that the cone or ring structure predominates in all four cities" (p. 224).

With respect to its ambitious goals, the book is hard working though often redundant or unsatisfying. Much of the same material appearing in ten of the fifteen chapters can be found in earlier publications, albeit one of these was originally in Spanish (see chaps. 1–7, 9, 10, and 14). Where something new has been added to an earlier formulation, it is often done so at the cost of clarity. For example, in chapter 1 Miller introduces "ten mutually exclusive forms of power that are easily distinguishable" (p. 5), which include things like "political influence," "governmental authority," "specialized knowledge and skill," "superior qualities of leadership," etc. Without bothering to persuade the reader of the doubtful assertion that these forms of power are indeed mutually exclusive or easily distinguishable, he quickly moves on to introduce three "types of

power," positional, reputational, and issue-decisional (p. 7). The connection between "forms" and "types" is never made clear as the discussion moves to conclusion by way of a reintroduction of the old Miller-Form "five components of community power structure," or here, the "community power system model."

The point of this is simply to illustrate that the book begins in conceptual confusion that bodes ill for subsequent clarity of the findings. This is due, perhaps, to an overly eclectic bent that constrains Miller to include in his approach everything that has been cited as an omission in earlier work.

In my judgment, Miller has also been overly ambitious in his claims for methodological continuity among these separate studies. Certainly he has quizzed people about the top influentials and institutional sectors in the four cities as well as interviewed some of these top influentials to determine their favorites or the key influentials. Nevertheless, there appear to be differences in how the original pools of names were assembled, how judges or raters were selected to screen these lists, how many raters were used, how many steps took place in the screening process, how many of the reputed top influentials were ultimately interviewed, and what questions they were asked.

The most useful technique presented in the book charts overlapping organizational memberships of Seattle key influentials (p. 70). He goes on to assert that the same thing was done in Bristol and summarizes the findings but does not present the data in tabular form. If systematic data exist it is a pity they were not presented, since this technique conveys a good deal more substantive information than many of the tables and diagrams he offers. A somewhat different but equally interesting table is presented for Lima, although here a larger group of "powerful persons" is compared on the basis of overlapping participation in various public and private activities. Once again, no such data are available for Cordoba or, strictly speaking, for any of the other cities.

Finally, in view of the controversy over methods in this field, it probably would have been wise for Miller to augment his later studies with analysis of actual participation in projects and issues. Although the wording of some of his conclusions often implies that he has done so (e.g., pp. 122, 180, and 194), all of his data on the topic are opinions about the participation of people and do not result from his observation or reconstruction of specific events.

The study of Lima is seriously deficient in its sampling design and sensitivity to social change. Through his more and less standard means (positional leader pools, raters, etc.), Miller identified 120 top influentials in Lima. As a U.S. citizen and visiting scholar, he then felt obliged to consult with the U.S. embassy, which advised him to interview only "approved" influentials—"those whom officials of the United States Embassy felt would not embarrass the United States, the Fulbright Program, or the researcher" (p. 149). Perhaps the most interesting datum in this book is the fact that, from Miller's list of 120, the embassy "ap-

proved" only twenty-five, or 20 percent! In a comment that the reader will have to judge for himself, Miller observes, "It is possible that this criterion introduced a bias, but every effort was made to secure a representation of persons who were thoroughly familiar with the community" (p. 149). Incredulous as this may be, Miller never even compares the 20 percent he was left with, after the embassy's purge of his list, with the 120 to investigate any "possible" bias in his group of "friendly" respondents. This is probably not accidental, since repeated comments suggest that Miller shares the biases of these censors; he speaks enthusiastically about the role of foreign-owned industry in "supporting" the economy and offering community services without manipulation, the development of democratic traditions, the rising middle class, the value of private enterprise, the stabilizing effects of the military, the value of foreign aid, and, generally, all of the catchphrases that justify the status quo relationship between the United States and Latin America. By this I do not mean to suggest that bias inevitably is wrong or that honest men may not debate these issues. What I do mean is that Miller does not debate the issues or recognize his bias and does not question how it might have influenced his work.

The question, of course, is whether these biases affected the results. I believe they did. Without data, Miller describes how industrialization is producing a rising middle class capable of acting as a moderating political force between rich and poor. He ignores, for example, work done in Peru by David Chaplin indicating a direct relationship between industrialization and greater inequality of wealth and income. Similarly, he ignores the thoughtful analysis of Bourricaud, who shows how Peruvian oligarchies have indemnified the middle classes, until recently, as they have moved from a position of absolute to relative dominance. His methods repeatedly indicate a low-profile role of the military. "The military remains inert except as it becomes concerned with a Communist threat, increasing inflation or its own budget" (p. 194). Nevertheless, two years after Miller completed his fieldwork, the military took control of the government, not because of any of the concerns mentioned, but because of the president's failure to renegotiate the leases under which Standard Oil operated in Peru. In a somewhat confusing passage, Miller notes that "people of all social classes are aware of these dangers [of nationalized industry] and so resist or are indifferent to political pressure and threats to throw private enterprise out. For more than ten years all major political parties in Peru have been calling for the nationalization of the oil fields and refineries of Standard Oil. Only naked military coercion finally prevailed in 1968" (p. 207). What this observation ignores is that the people of most social classes, the Lima newspapers Miller himself recognized as influential, as well as leaders throughout Latin America roundly supported the junta once it declared its intention to expropriate the oil and large foreign-owned agricultural properties.

In short, the biases of U.S. political and economic interests brought to or imposed on the study may have led to a serious misreading of the

situation in Lima, which should give pause to other U.S. social scientists working abroad concerning the inevitable ideological choices they must confront.

These political questions aside, the book is unsatisfying on strictly conceptual and methodological grounds. Miller's overall intent seems to be a "test and evaluation of the system model of community power structure," or assessing the "fit" across cities of institutional, organizational, and influential rankings. This is unsuccessful for two reasons. First, the separate rankings are not independent of one another; they all derive from similar interview questions with a relatively small number of people. Second, there are no unambiguous quantitative measures of more or less "fit" with rival models; the question of whether we have a stratified pyramid or a ring or cone (and these are by no means exclusive or exhaustive alternatives) yields only an impressionistic solution. Hence, we are left with the uninformative conclusions that these cities look more or less alike, business and government everywhere are important in varying combinations with labor and education, and so on.

Ambitious books invite ambitious criticisms. Aside from what has been said, perhaps the most impressive feature of this work is the sheer amount of time and effort it represents. For that reason, students of the field would be well advised to survey and build on these ground-breaking labors.

Politics and Society. By Robert M. MacIver. Edited by David Spitz New York: Atherton Press, 1969. Pp. xx+571. $12.95.

Barry Skura

University of Chicago

The eminent political theorist David Spitz includes in this volume forty-seven of the occasional essays written by MacIver over the last sixty years. While only seven of these are new, many are likely to have escaped current sociological attention due either to their age or to their place of publication. Too, a large number of these will be appreciated less as contributions to sociology, narrowly conceived, than for the insight they provide into an incisive, multifaceted mind as much concerned with the "ought" as the "is." For instance, the index to this volume cites Plato fifty-two times but Weber only twice. A selection of MacIver's articles on sociology and social theory will be published soon in a companion volume.

The unifying theme of the essays in *Politics and Society,* Spitz says in his introduction, is "the relationship between the One and the Many, the Many in the One, and the One again in the Many" (p. xv). In the "frame or structure of the relationship between the One and the Many" (between group and individuals, government and groups, international community and nations), MacIver looks for permanence. In "the ever-evolving character or process of that relationship" he locates change

To find the principles by which unity emerges from diversity is a central problem for MacIver. Unlike some current system builders in the Hegelian tradition, he realizes that social phenomena cannot be reduced to those unifying principles. MacIver knows that socialized men retain some uniqueness and that the scholar cannot understand social values apart from the activities of concrete men. While the government may be the most important vehicle for attaining national goals, he argues, such goals do not subsume all social ends. In a multigroup society, further, loyalty to the state does not exhaust one's social attachments. That state and society are distinct is one of MacIver's key themes. Because the democratic principle accepts diversity, in loyalties as well as ideas, that author is passionately committed to it. He is aware, though, of how far America is from realizing her ideals, particularly with regard to race.

The articles in this book, in which his ideas of the One and the Many are elaborated, are arranged under six headings. Under the rubric "The Quest for Meaning" are mixed four mediocre pieces on the scholarly process, an excellent short essay where he distinguishes signs (denotative) from symbols (evaluative) and points to their differing roles in communication, and a very significant essay, "The Historical Pattern of Social Change." In this he examines the principles of order in history with a perspective approaching that of the Parsons of *The Structure of Social Action*. Rejecting organic conceptions, he thinks of society "as an array of diversely ordered systems overlapping and merging into each other" (pp. 35–36). These are culture, instrumental systems (economic, political, technological), and material factors (biology, physical environment).

The second section is on ethics and politics. In the first article, by the same name, he deals with the competing claims of political and ethical obligations. The next piece gets at the same problem by first criticizing the ethical assumptions behind ideas of historical necessity and evolution, particularly the confusion of the "is" and the "ought" that occurs when the ethical value of a situation is gauged by its persistence. Next is a fine piece on the ethical significance, and dilemmas of, Plato's idea theory. Of the succeeding four articles, the one most interesting sociologically is "Personality and Suprapersonal." This takes a symbolic interactionist perspective in explaining social order and, like most of the book, is an excellent antidote to the tendency of some sociologists to reify social phenomena. "The Passions and Their Importance in Morals," a previously unpublished essay, deals with the nature of emotions, character structure, and consciousness.

"State and Society," the third—and perhaps best—section, includes an exchange of letters between MacIver and Bosanquet (dealing with the latter's failure to distinguish between society and state), a piece on Bertrand Russell's political and social ideas, and an exegesis of *Mein Kampf*, all of which are newly published.

I find the initial three articles in this section especially good. "Do nations grow old?" asks the first. "No," MacIver responds, distinguishing between the social life of a society (for which "birth" or "death" are misleading terms, since the attendant culture is transmitted between

generations and across societies) and its organizational structure (which may die or be born). He elaborates his open-ended view of society and criticizes views of social change such as Spencer's. Next, "The Foundations of Nationality" includes a classification of different bases for a people's consciousness of themselves as a nationality and historical changes in that sense. "Society and State" explicates the grounds upon which the two phenomena should be distinguished and criticizes Rousseau, Hegel, and Bosanquet for merging them in their Hellenistic interpretation of the "general will."

Under "Government and Social Change," the fourth part, are pieces dealing with the philosophical background of the Constitution, a more popular description of political changes of the last two centuries, remarks on the 1931 papal encyclical on labor, and programmatic comments on government, economic goals, and social welfare.

The theme of section 5, "War and International Order," concerns sovereignty; the social interrelations between nations render the absolute notion of sovereignty out-of-date. He prefers a world organization in place of the balance-of-power system for maintaining peace. Its establishment would presuppose that people recognize that an international community exists which transcends state boundaries—or, more basically, that state and society are not coterminous. On a world scale as well as national, MacIver feels, the democratic principle could bring unity while realizing diversity.

Like most of the prior two parts, the last, "Ends and Means," is valuable more as an illustration of the author's breadth than for its substantive sociological contribution. The articles deal with "educational goals," "the art of contemplation," privacy, unequal life chances, and the "assault on privacy." A fascinating concluding piece tries to place contemporary creative efforts, of which existentialism is characteristic, in a wider social context.

MacIver is always worth reading. My only complaint here is that Spitz, in his "act of piety" (p. ix), is a little too enthusiastic. Many of the articles could have been discarded. Is it important to know with what MacIver, in 1946, thought UNESCO ought to occupy itself? Otherwise, the editor should be commended. The introduction and the index are good, and he compiled the first complete (except for book reviews) bibliography of the author's work. A selected list of critiques is included.

On Communication and Social Influence. By Gabriel Tarde. Edited, with an introduction by Terry N. Clark. Chicago: University of Chicago Press, 1969. Pp. viii+324. $11.00 (cloth); $3.45 (paper).

Edward A. Tiryakian

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Who in the world bothers to read Tarde today?—to paraphrase the opening query of *The Social Structure of Action*—and most sociologists

under thirty (to say the least) will probably add, "Tarde who?" In the firmament of the *belle époque* of French sociology, the star of Gabriel Tarde (1843–1904) was eclipsed by the brilliant galaxy of the Durkheimian school, and until the present volume, one could say, in his case, "Out of sight, out of mind." Now, however, a young scholar has done a signal service to this neglected figure by editing a selection of Tarde's major works in the distinguished Heritage of Sociology series edited by Morris Janowitz. And the real appeal of this volume is Terry Clark's own extensive sixty-nine-page introduction, which as a condensed intellectual portrait nearly qualifies as a tour de force, and certainly represents a valiant effort at rehabilitating the stature of Tarde.

Before we get to the introduction, let us note that the selections are organized into twelve sections, designed to indicate the sweep of Tarde's sociological pen (including selections on collective behavior, social control and deviance, public opinion, mass communications, and personal influence). Most of Tarde's major works are represented, from *The Laws of Imitation* and *Social Laws* (both of which appeared in English shortly after their French publication and were favorably received in America by Baldwin, Ward, Giddings, Small, and others) to works previously untranslated but worth perusing, such as *Opinion and the Crowd* and a general treatise on conflict, *Universal Opposition*, which, in view of the new vogue of interest, deserves attention (if not a complete translation). To provide spice to the rather undramatic contents, the editor has inserted two selections (pp. 112–40) which feature, so to speak, "confrontations" between Tarde and Durkheim. And Clark, in his introduction, suggests that the dispute between the two involved more than two men: it brought into play two "opposing sectors of French society," two cultural configurations (p. 8).

Clark places in one camp (presumably the one championed by Durkheim) Cartesianism and the legacy of rationalism found in such institutions as the army, the state university system, the church, and the governmental administration; its adversary, he claims, was the camp of "Spontaneity," including romantic nationalists of the Right and anarchists of the Left. In terms of institutional settings, Cartesianism had a stronghold at the Sorbonne, while Spontaneity had a niche at the College de France, where Tarde was elected to a chair. (Very roughly speaking, the situation was analogous to the styles of Harvard and the New School.) In introducing this dichotomy of Cartesianism and Spontaneity, Clark mutes a more significant split in French society, political in nature—that between Left and Right, on the one hand, and on the other between radical Left and the liberal Left (the latter being essentially in power during the period from 1870 to 1914). To lump "church" and "state university system" as part of Cartesianism is to play down the very violent struggles between the two. And to lump, as Clark does Action Française of Maurras with romantic nationalists and Spontaneity of the Left is simply not warranted in terms of the violent opposition of Maurras, the leading figure of the radical Right, to what he considered the mystical, romantic subjectivism of the Left. Besides, in reading

Tarde, one sees little that would suggest his affinity with Spontaneity—for even his writings on innovation and imitation do not really give much emphasis to spontaneity but, rather, to the structural regularities in the process of diffusion of ideas and inventions. The real split between Tarde and Durkheim, it seems to me, was over the nature of social reality—Durkheim was a realist, Tarde a nominalist—but, as Clark certainly indicates well and wisely, they really had more points of sociological concord than discord, for example in their common rejection of the biologica school of criminology.

Although this book will do as much as can be done to redirect attention to the unassuming criminologist, social psychologist, and sociologist that Tarde was, there are some limitations. Tarde was not a stimulating writer, and there is a humdrum quality to his style which at times slips into rather bizarre metaphors (see, e.g., the bottom paragraph on p. 170, where he speaks of "two rays of instances" and "imitative radiation") His analysis of social facts and social phenomena is simplistic in comparison with Durkheim's—most of his ideas tend to be variations on the theme of imitation as *the* key to social reality. Finally, although a reviewer should guard against the temptation of picayune criticism, there is such a plethora of typographical errors in this volume, both in the introduction and in the selections, that this constitutes, after a while, a major distraction to appreciating the contents. As examples of this, let me cite such items as "phasmagoria" (for phantasmagoria, p. 17), "spitiualism" (for spiritualism, p. 112), "contact theorists" (for contract theorists, p. 15), "teleological duals" (for duels, p. 170), etc.

In conclusion, I doubt whether this volume will lead to a revival of Tarde, in part because, despite Clark's affirmation (p. 17) that Tarde was right in espousing philosophical nominalism and Durkheim was wrong in espousing the realist position, our own emergent social climate today is much more inclined to social realism than to nominalism (even if realism is a tacit position of radicals as well as right-wingers, and nominalism of liberals). But the lasting merit of this volume is its contribution, though more suggestive than definitive, to the social and intellectual context of French sociology.

White Protestant Americans: From National Origins to Religious Group
By Charles H. Anderson. Ethnic Groups in American Life Series. Milton M. Gordon, general editor. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970. Pp. xx+188. $6.95 (cloth); $2.95 (paper).

E. Digby Baltzell

University of Pennsylvania

This monograph is part of the series Ethnic Groups in American Life, edited by Milton M. Gordon, which will include other monographs on Jewish Americans, Japanese Americans, black Americans, Mexican

Americans, and so forth. The author has written a sensible and solid book on a slippery subject—slippery because there is some question as to whether "white Protestants" are best understood as one of the many "ethnic groups" in American life. Thus, the traditional sociology of ethnic relations in this country has largely concentrated on minority groups, especially those whose members came here after the Civil War from southern and eastern Europe or Asia and subsequently suffered various forms of discrimination in the course of their attempts to rise out of pariah and lower-class status into the mainstream of middle-class life. White Protestants, on the other hand, have always been and still are both a majority of our population and situated in the higher levels of middle-class life. They have been considered Americans rather than hyphenated Americans, discriminators rather than objects of discrimination. This has been the case ever since sociology became a recognized science in the early years of the twentieth century.

The author has, nevertheless, handled this problem wisely and well by taking a historical, or what I should like to call an up-hill-and-down-dale, approach. In other words, part 1 of the book is devoted to a discussion of how the various non-English, national-origin groups from northern Europe, faced with an established, British hegemony, gradually melted into a new white Protestant majority in the course of the eighteenth and nineteenth centuries. The author brings a wealth of judiciously selected detail to show how this process worked for the members of the various national-origin groups—Scots and Ulstermen, Swedes, Norwegians, Finns, Dutch, and Germans. The language barrier was, of course, the main factor determining the rate of assimilation; time and place of first migration were also important. Thus, the Scots and Ulstermen were highly educated and spoke English, came early, and were rapidly assimilated into the very highest levels of the social structure, as such men as Thomas Jefferson, Patrick Henry, James Wilson, Washington Irving, and John Paul Jones illustrated so well. The Continental, with his different language and culture, of course, took longer to melt into the pot. But even they melted differently; for example, the Dutch in New York had an experience different from that of the Germans in Pennsylvania (some of whom, such as the Amish and other sectarians, still remain apart). In this connection, and considering our long interest in the Protestant ethic, I should have liked the author to have placed more emphasis on religion (regardless of national origin) as a vital factor in assimilation. One has the impression, for instance, that it was the Calvinists, whom Weber incidentally used as the prototypical example of the Protestant ethic, who assimilated fastest, while the Lutherans and the Sectarians were more likely to lag behind in their religious and ethnic islands. There is no space to go into details here, but it is indicative that all the major denominations, except the Lutherans, have had at least one president of the United States; and the Calvinists (Presbyterian, Reformed, or Congregational), whether Dutch, English, German, Scots, or Irish in national origin, have produced more

presidents than any save the Episcopalians, many of whom were, like the Roosevelts, of Calvinist background.

After part 1 has shown how the non-English stock struggled uphill to form part of the Protestant-British dominant majority which ruled America from the Civil War to World War II, part 2 shows how the Protestant hegemony went downdale after World War II. Unfortunately, this book is weak in analyzing just how, when, and why this waxing and waning of Protestantism took place. At any rate, "Protestantism in America today," wrote Will Herberg in 1960, "presents the anomaly of a strong majority group with a growing minority consciousness." No doubt the use of the term "WASP" is now used, within this new context of competing ethnic groups without a hegemonic majority, as a kind of compensatory and negative epithet not entirely unlike such older epithets as "wop" and "kike" which are no longer permissible in polite society. Perhaps there is a crisis in American leadership today partly because we are now all marginal men, doubting our right to rule in an age when who's to say who's right and no values are any longer sacred. This book is weak in that it makes no attempt to analyze this very vital problem. Thus, part 2, like part 1, is largely descriptive—and, strangely enough, largely descriptive of Catholic-Protestant differences; "anti-Semitism," "Jew," and "Jewish" are not to be found in the index.

But men are always better judged by what they do than what they do not do. This author has done a fine job of documenting the rise and fall of white Protestantism in America.

The Politics of Corruption: Organized Crime in an American City. By John A. Gardiner. New York: Russell Sage Foundation, 1970. Pp. xi+129. $5.95.

Humbert S. Nelli

University of Kentucky

The Politics of Corruption is an effort to determine the impact of corruption and organized crime on the urban political process, and the roles played by politicians, law enforcement agencies, and the public. The study began as a research project for the President's Commission on Law Enforcement and Administration of Justice and focuses on the experience in Wincanton, "an Eastern industrial city which has been controlled by a crime syndicate for most of the last fifty years" (p. 5).

The book offers a number of insights, including that the average voter is interested in crime only when it affects him personally; that corruption is a fact of political life and probably will always exist; that, in consequence, the successful urban reformer will place priority on defining and limiting corruption rather than on eradicating it; that political reform is doomed to failure if it offers only opposition to crime without a clearly

formulated program for dealing with a multitude of less sensational urban problems; and that corruption can have beneficial side effects, but that the long-term costs are disastrous—in Wincanton, for example, the pervasiveness of corruption has dissuaded competent, energetic men from seeking office.

Wincanton is presented as a typical American city. Yet evidence offered by John A. Gardiner suggests that the Wincanton experience is, in many ways, atypical. At a time when organized crime in urban America is allegedly controlled by Italian-Americans, Irving Stern, a Jew, is able to "go it alone" with impunity. Currently, the racial composition of American cities, particularly industrial ones, is undergoing drastic changes; yet Wincanton seems to suffer no ethnic antagonisms or rivalries, and apparently requires no elaboration concerning the role of race in local politics. The city's vice and corruption must indeed be unique, since Wincantonites are ashamed to mention their place of residence when they are elsewhere (p. 86).

"Wincanton" and "Irving Stern" are pseudonyms, like other proper nouns in the book. If Gardiner has sufficient documentation for his statements, why should he disguise the names of syndicate leaders and corrupt politicians and law enforcement officials? This fictionalizing hinders further research, hampers comparative studies, and imparts an air of make-believe.

A more serious shortcoming is the book's lack of historical perspective. For example, cities like Chicago and New York contained organized criminal gangs and a tradition of police-politician-gangster cooperation decades before the 1920s. Was this true of Wincanton? If so, how did Stern take advantage of the situation and eventually dominate it? Gardiner provides no answers and, in fact, does not ask these or similar questions. Furthermore, the presence of the commission form of government, which Gardiner identifies as the source of a ruinous fragmentation in city government as well as of a political vacuum attracting criminals, was a favorite panacea of progressive-era reformers. This suggests the possibility that Wincanton has a long-standing (although doubtless sporadic) reform tradition along with its history of crime and corruption.

This book raises some vitally important issues but does not fulfill Gardiner's promise to answer questions "concerning the interrelationships among law enforcement, corruption, and urban politics" facing mid-twentieth-century America (p. 5). Instead, Gardiner provides the results of a 1966 survey which (he points out) is probably not definitive. Indicating that the situation is extremely complex, with a variety of opinions on both sides of all issues, he notes accurately that the status quo in cities like Wincanton "is intolerable" (p. 104). Many of his suggestions for improving it—like expanding the power of the mayor and guaranteeing job protection for policemen against political interference—have been tried in other American cities and bent to the use of criminal organizations. It seems naïve to believe that criminal leaders will accept reforms designed to curtail profits; in Wincanton, as elsewhere, syndi-

cates can find other areas of activity. Another suggestion—that
of state and federal enforcement agencies be expanded—is pro
because the only effective action against entrenched crime has cor
state and, especially, from federal agencies. Yet Gardiner does
plain what he thinks this new state and federal policy should be

The Honest Politician's Guide to Crime Control. By Norval Mor
Gordon Hawkins. Chicago: University of Chicago Press, 1969. I
271. $5.95.

Michael R. Sonnenreich

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It is a rare occurrence indeed when I can say that I enjoyed readin
the state of our criminal justice system, but I feel, in this case, t
enjoyment is justified. Instead of the usual platitudes and pontifi
which are now de rigueur for persons writing about crime in the
States, we are introduced to two men's view of what the problen
their fearless forecast as to what to do about it. While for some tl
lessness will be considered fearsome, for those truly concerned w
state of our criminal justice system this is, nevertheless, provocat
necessary reading.

Because of the increased interest in crime, unfortunately gal
by personal fear and a high group awareness of its impact on "tl
life," criminal justice and its attendant administration has recent
theorized to death. The value of this call to action is that it is a
tion of the best thinking from the multitudinous trivia that h
written about the subject in recent years and it pinpoints for the
not just the problems but plausible solutions as well. While many
ukases propounded have a *de minimis* chance of becoming gove
policy, the authors' careful delineation of their approach has great
tial value in directing legislative and executive bureaucracies
needed compromise positions. Many of their initial propositions
ready becoming both de facto and de jure in many states of the
such as the ukases regarding abortions, disorderly conduct, and
behavior, while others, I feel, will remain with us for a long time. I
this is so because of the peculiarities of American criminal jurispr
which has a tendency to meld church restrictions into governmen
hibitions. While Herbert Packer stole most of the thunder from
thors in this area, I was somewhat disappointed that they did not
olate in greater detail the moral issues underlying this area of c
Inchoate crimes are certainly worthy of more sociological scrutiny
context of practical criminal law reform.

The book is basically divided among nine major areas of conce
first of which has just been alluded to above. The authors discuss

cidence, costs, victims, and causes of crime which, coupled with their last chapter, dealing with research, constitute a much needed plea for more practical studies and less esoteric models. The authors recognize that, while basic research, including models, has some merit, what is needed now is directly applied research that will result, hopefully, in more pilot programs in the areas of police administration, juvenile delinquency, and corrections.

I felt that the authors, in their discussion of crimes of violence, explained the impact of these acts on society in a nonhysterical, realistic way. All too often, this area acts as a trigger and has been successfully used by all sides to becloud the larger issues. Crimes of violence are not new and will be with us regardless of what changes take place in our system of justice, mainly because they unfortunately appear inherent in the human fabric. As a practical approach to minimize this human condition, their propositions relating to the prohibitions against the use of firearms are rational and, I predict, not long in coming.

The chapters relating to rehabilitation and juvenile delinquency are more in the nature of a compilation of current thinking rather than an advancement of new ideas and approaches. The merit of these chapters lies in the fact that they are well written and present a valuable distillation of what has been said before. I found the chapter dealing with "Crime and the Psychiatrist" most provocative in that their ukase relating to the abolition of the defense of insanity opens up a new area of thought that will leave most attorneys and judges somewhat adrift and disoriented. I feel this is good. Our insularity as professionals in this area is all too apparent, and I for one have felt uneasy about the coat of many colors we have created regarding this defense. Once again, it is somewhat disappointing that this area was not more fully explored by the authors, and I look forward to a fuller exposition.

The chapter relating to organized crime and God is perhaps the one area where the authors are completely out of their element. While I agree that organized crime requires more of an in-depth analysis than is usually given, to dismiss its importance as unprofitable, unfounded, or for that matter, unnecessary of definition is irresponsible. The "brief" submitted by the authors on this point is not convincing—metaphysics and theology aside. The arrest of persons based on information obtained from their own mouths as a result of wiretapping refutes the authors' arguments. Recent wiretaps in gambling and drug cases, as well as the much publicized wiretaps in New Jersey relating to corruption in government, make it apparent that there is indeed organized crime in these United States. Whether it all flows into a common funnel is irrelevant. What is important is its structure, its organization, and its incredible effectiveness. While I disagree with the authors' argument in this regard, it does, however, have a salutary effect by requiring the law-enforcement community to be more selective in marshaling evidence and more sensitive to categorizing what is and what is not organized crime.

The value of this book is great as a starting point for the thoughtful reader into an area of public concern which affects him directly. The authors have created a useful tool and have performed a public service. To fail to understand the issues of crime control in our society today is to limit one's real understanding of the nation's current problems and urban turmoil.

Financing the Metropolis: Public Policy in Urban Economics. Edited by John P. Crecine. Urban Affairs Annual Reviews, vol. 4. Beverly Hills, Calif.: Sage Publications, 1970. Pp. 632. $20.00.

Terry N. Clark

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This volume is a good illustration of the convergence of political scientists, sociologists, and economists who have focused on questions of urban public policy. The convergence derives from several sources, but in both sociology and political science it reflects a concern to move beyond the study of community power structures and governmental processes in order to link these aspects of decision making to specific policy outcomes. Economists in recent years have become increasingly interested in questions of public finance and urban economics; in expanding their traditional perspectives, they have begun to incorporate elements of social organization and the political process heretofore largely ignored. The rapid growth of the Public Choice Society (which holds annual meetings and publishes *Public Choice*) is part of this same convergence, and several contributors to this volume are active in the Public Choice Society. Crecine has done a good job of assembling contributions that complement one another to illuminate the subject of urban public policy. Like earlier *Urban Affairs Annual Reviews*, this volume is oriented toward the general public as well as the social scientist.

There are reviews of earlier research, one of the most careful of which is Gail Wilensky's critique of the literature on the determinants of public expenditures. After summarizing some of the major empirical results, she points out the methodological inadequacies of much of this work and includes suggestions for future improvement.

There are reports of original empirical research. Arnold Meltsner and Aaron Wildavsky summarize some aspects of budgetary decisions in Oakland, emphasizing the logic of the internal adminstrative process and warning against premature adoption of Planning Programming Budgets Systems (PPBS) by local governments. Joel Aberbach and Jack Walker present some interesting findings about black and white attitudes toward city services, the police, and race questions in Detroit. In a series of propositions about community and governmental factors affecting different budget items. W. Ed Whitelaw summarizes his work on Worcester. Peter

;isinger presents a pessimistic evaluation of six community antipoverty ,rograms in Brooklyn.

There are several articles which consider the application of models, enerally derived from economic theory, to urban questions. James Buhanan uses a simple model involving private and public goods to illumi-ıate the process of the erosion of urban public facilities. Otto Davis examnes urban-renewal decisions as illustrationsof Prisoner's Dilemma Games. \nthony Pascal develops a somewhat analogous model to explain the naintenance of racial segregation in housing.

There are evaluations of existing programs and recommendations for ıew policies throughout the volume. Some of the most pointed are Albert Reiss's suggested combination of certain aspects of welfare, health, law ·nforcement, and other services in a single agency in more client-centered ashion; Arnold Meltsner's advice to city leaders on how to squeeze more out of existing fiscal arrangements at the local level; the discussions of 'ederal aid by John Riew, Lyle Fitch, and Terrance Sandlow; the impli-:ations of PPBS by Selma Mushkin and Donald Borut.

The economics of the poverty sector is discussed by Daniel Fusfeld; by Richard Muth with a focus on housing; by Dick Netzer with a focus on tax structures; and by Roger Noll from the perspective of the geographic distributions of people and jobs.

Sociologists, especially those not familiar with the public-choice perspective and concerned with urban policy questions, should read this volume both for its substantive contributions and as an illustration of thinking sharper than that characteristic of most sociologists.

Woodruff: A Study of Community Decision Making. By Albert Schaffer and Ruth Connor Schaffer. Chapel Hill: University of North Carolina Press, 1970. Pp. 325. $10.00.

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Community studies frequently provide only the broad historical material that is needed for a vague background to recent events and contain very limited information regarding the structure and operations of the formal organizations quietly influencing decision making. The Schaffers' book effectively overcomes both limitations in a well-executed study of resistance to political change in a city and township entangled in a developing metropolitan region. The report illustrates some of the sources within urban stratification systems of problems for the political integration of metropolitan areas. However, it is hampered somewhat by its methodological origins in reputational studies of community power, resulting in a tendency to focus on individuals rather than the social structures in which they operate. Further emphasis upon the structure of local institu-

tions would have improved the usefulness of the book for current issues concerning the internal integration of urban communities.

The midwestern city of Woodruff and the township of the same name which nearly surrounds it are described as having been locked into economic competition by local industrial development accompanying and following World War II. However, the two municipalities adopted very different historical patterns of decision making originating before the Depression, regarding the encouragement of economic development and the risks of social and political changes which could result. These patterns are shown most clearly in the expansionist and restrictionist orientations adopted by the township and city, respectively, toward the development of public sanitation (water and sewage treatment) facilities which would allow both territorial redefinition and community development. The cultural and socioeconomic conflicts which led to the different development policies also set the framework within which several attempts to resolve problems through merger of governmental units were stopped.

More important than the single issue of municipal sanitation, the authors explore in some depth the role of three elite leadership institutions in the community—the banks, chamber of commerce, and newspaper. The development and structure of these institutions are described for the period since the Depression. From that time through the late 1960s, each of these institutions influenced local decision making, largely through selective inaction and the prevention of important issues from being opened to community-wide consideration.

Finally, the dual pressures of established decision-making patterns and elite institutional interests are described as having greatly influenced the failure of two attempts (1957 and 1963–64) to consolidate the city and township into a single municipal administrative unit. These failed largely due to the efforts of leaders in the two municipalities—the older, established business leaders of the city and the younger, mobile political leaders of the township—to maintain the power and advantages of their current positions. Especially in the city, these outcomes were a continuation of established decision-making patterns whereby top leaders in effect undercut the influence of younger, mobile second-level leaders. The banks and chamber of commerce stayed out of the controversies, each responding to area-wide constituencies and the desire to maintain existing social and economic patterns. The newspaper made some effort to support the mergers, but was ineffective largely as a consequence of its previous reluctance to educate the community regarding the sources and effects of ongoing social change. The events of both attempts also reduced the influence in the community of the few leaders ready to act as agents of social change on a variety of issues.

The generalizations of the study are restricted somewhat by its orientation toward individual leaders rather than the internal organization of local elite groups. Beyond merely describing the various activities of leaders, the differentiation of tasks within elites would have allowed a

more direct analysis of the community without resorting to the rather spurious anonymity of contrived names and places. Such a horizontal elaboration of the valuable institutional research of the study, combined with a vertical extension downward into the social organization of lower socioeconomic strata of the community and upward to the organization of regional and national institutions, could have allowed more direct reporting of events. Many aspects of such horizontal and vertical structures are described in the study, but in terms of individual actions instead of being systematically presented as role behavior within informal associations. Such description might have provided the community with perspectives concerning its own internal processes which could have been used in establishing the more orderly and reasonable decision-making patterns that the researchers as participants and activists would have preferred to have occurred.

The Negro Peasant Turns Cityward. By Louise Venable Kennedy. Reprint. College Park, Md.: McGrath Publishing Co., 1969. Pp. 270. $10.00.

Negro Problems in Cities. By T. J. Woofter, Jr. Reprint. College Park, Md : McGrath Publishing Co., 1969. Pp. 285. $12.00.

Zane L. Miller

University of Cincinnati

In recent years, publishers have been persuaded, in Louis Harlan's phrase, that black is green, and a few have discovered that historical studies of urban blacks represent one of the safest investments available in an increasingly competitive market. Yet the current curiosity about Negroes in cities is not unprecedented. Well before the great flight of blacks from the South during World War I, both journalists and scholars had noticed and commented upon the increasing number of Negroes who were moving into urban places. After 1915 the migratory drift became a flood, and the quantity of commentaries on the process swelled enormously. These two books, both written in the 1920s by professional social scientists, are products of those developments. Unfortunately, one volume confuses race with class and the other fails to distinguish ghetto from neighborhood.

Kennedy's book, one suspects, will have less interest for sociologists. First published in 1930, it was prepared as part of a study of Negro population movements sponsored by the Social Science Research Council and the Columbia University Council for Research in the Social Sciences. According to Frank Alexander Ross's foreword, the project directors felt that contemporary sociologists, "welcoming the seeming precision that the statistical method affords," had too often merely demonstrated the obvious or reiterated what was already accepted. Miss Kennedy preferred, instead, to rely on "the carefully weighed opinions of a consider-

able number of individuals so placed as to have had adequate opportunity for large-scale investigations and with the necessary mental qualifications to arrive at sound generalizations from their experience," especially "when the options are expressed after elaborate survey by statistical and other approaches" (p. 6). Hence, the book is not a piece of original research but, rather, a survey of surveys.

Miss Kennedy's chief concern was with the impact of migration on Negro migrants, on northern urban Negroes and whites, and on institutions in the cities in which the newcomers settled. The coverage, however, is neither chronologically nor topically balanced. She considered only northern cities and literature on the post-1915 phase of the migration, and the analysis of the economic status of blacks took sixty-three pages, while race relations and demography occupied but nine and seven pages, respectively. She concluded that the new residents were not inherently inferior or vicious and argued that their problems stemmed essentially from their poverty. But their prospects were not bleak. On the whole, she contended, Negro peasants had made occupational progress in northern cities, and if whites managed to be tolerant and understanding, these most recent newcomers would continue to take advantage of the economic opportunities available to them in the cities and would make a satisfactory adjustment to urban life.

Woofter's study appeared two years before Miss Kennedy's and took a slightly different approach. Supported by the Institute of Social and Religious Research, his survey focused on the determinates of neighborhood life and on the aspects of neighborhood most subject to direction by municipal governments and local organizations. The volume is divided into four parts, each signed by a separate author. Three sections cover housing, schools, and recreation facilities and contain valuable information on conditions of life among urban Negroes in both the North and the South. But the most important contribution is the first. Written by Woofter and entitled "Neighborhoods," it carries the book's interpretive thrust.

Woofter argued that the neighborhood had been a vital agency in assisting rural migrants to adjust to urban life. It was the crucible in which the newcomers were subjected to the process of urbanization, a process which included migration, segregation, concentration, neglect, self-improvement, and amelioration of conditions, as city-wide concern about and interest in improving the worst districts took shape. He conceded that the "problem of the new environment has proved grave for the Negroes and for the cities into which they have moved" (p. 20). Yet his conclusion, like Kennedy's, was optimistic. The "person who is interested . . . can find encouragement in the tendency toward improvement in newer neighborhoods, in the increased interest of cities in these sections and in the movement of Negroes from the poorer to the better sections of each city" (p. 21).

Despite their different emphases, both books are, in the final analysis, based upon a mistaken analogy. They assume that the black experience

in cities would parallel that of the white rural migrants who had allegedly preceded them. That notion has proved incredibly persistent. We are still told by scholars and high government officials alike that, if we ignore race and keep our voices down, the city will eventually work its magic and the blacks will be quietly and peacefully absorbed into the urban mainstream. Urban historians now know better.

Blacks were not new to American cities in the opening years of the twentieth century. They had been urban dwellers from almost the beginning, and the ghetto had begun to take form even before Emancipation. After Appomattox, blacks pushed into southern cities in substantial numbers, and by 1930, Atlanta, Savannah, Richmond, New Orleans, Louisville, and other places in Dixie had a half-century's experience with the shift and growth of Negro neighborhoods within the context of the modern city. Those who know this story recognize that central city ghettos which housed the black middle class as well as the poor had become a permanent part of the southern urban scene as early as 1900. And though the blacks' position in the occupational structure had changed and continued to change, their peculiar neighborhood pattern did not. Thus, the blacks' problem was not simply a question of class, as Kennedy suggested, nor was it resolved, as Woofter argued it might be, by the attempt to establish separate but equal neighborhoods. In this view, the chief utility of these two books is that they remind us that race is the central domestic issue of our times and is not merely a hallucination produced by feverishly guilty white middle-class consciences. It is unfortunate, to say the least, that the publisher did not see fit to add an introduction to each volume which would have placed each in the appropriate historical perspective.

The Mexican-American People: The Nation's Second Largest Minority. By Leo Grebler, Joan W. Moore, and Ralph C. Guzman. New York: Free Press, 1970. Pp. xviii+777. $17.95.

Paul Kutsche

Colorado College

Here at last is the long-awaited major publication of the Mexican-American Study Project at UCLA. It is a good gray book which few people will sit down and read but which every concerned student from whatever discipline will use as a factual reference for the near future. It is instantly obsolete (almost all scholarship is, but this more than most), particularly concerning political movements and the census. Perhaps obsolescence is inevitable when the research design is so massive and the people under study are so mobile.

The scope of the Study Project is evident in the publications which have already emerged: eleven "advance reports," five doctoral disserta-

tions, and at least two monographs (Nancie Gonzalez's *The Spanish-Americans of New Mexico* [Albuquerque, N.M., 1969] and Thomas P. Carter's *Mexican Americans in School* [New York, 1970]).

"The investigation was initiated in 1963 with a prospectus for a 'comprehensive study of the socioeconomic position of Mexican Americans in selected urban areas of the five Southwestern states.' The actual research work began in January 1964. . . . The study was completed in the summer of 1968" (p. v). This volume, and some of the other publications, happily go beyond the prospectus in directions indicated in the table of contents.

The book has seven parts totaling twenty-four chapters, plus eleven appendices, a bibliography, and an index. The parts are (1) "The Setting," mostly socioeconomic; (2) "Historical Perspective," emphasizing the century since U.S. conquest, with little about Mexican history; (3) "Socioeconomic Conditions: A Detailed Portrait"; (4) "The Individual in the Social System," with focus on social class, the family, and cultural tenacity; (5) "The Role of Churches"; (6) "Political Interaction," which echoes and booms with the almost total absence of the United Farm Workers Organizing Committee, the Crusade for Justice, or the Alianza Federal de Pueblos Libres, but which does analyze older Mexican-American organizations; and (7) "Summary and Conclusions." The appendices tell the reader the design and source of most of the information in the text.

The geographical boundaries of the study include the statistical Southwest—all of the states of California, Arizona, New Mexico, Colorado, and Texas—not the ecological or culture-area Southwest. The urban areas selected for the most careful study are Los Angeles and San Antonio, the two largest concentrations of Mexican Americans. Some readers may share with me a bias toward seeing Spanish-surnamed people in the Southwest as rural and in some ways still peasant. If they do, they are in for the same surprise I experienced in discovering that this population is very heavily big-city.

The virtues of this study are intertwined with its limitations. It presents masses of charts, graphs, and statistical information in institutional-gray prose. It is low on analysis and argument. The dynamic interrelation of separate institutions as an organic whole, which is integral to studies in my own discipline of anthropology, is almost totally lacking. Argument for the relative importance of the several cultural traditions (Spanish, Indian, and Anglo) which lie behind modern Mexican Americans is omitted. Most of this book is blandly noncontroversial, and this will be one of its particular strengths when its monumental collections of facts are used to support the positions of those in and outside of scholarship. Fortunately, the charts and graphs are very clearly presented and carefully indexed. "Distinctive Population Patterns" (pp. 105–41) should be singled out for useful manipulation of census figures to demonstrate rural-urban shifts, geographical concentration county by county, dif-

ference in sex-age distribution between Anglos and Mexican Americans, and so forth.

More incisive than most of the book are the two chapters on Catholic and Protestant churches. Analysis of the role of Catholic clergy in Mexican-American life, made for the most part by clergymen, lays out the dispute between conservative upper echelons of the regional hierarchy versus liberal priests and representatives of national Catholic organizations on the question of support for the United Farm Workers strikes. In fact, almost the only mention of Cesar Chavez's movement in the book is contained in this chapter. As the senior authors say, "This kind of institutional analysis is rare either in the standard literature on religion or . . . in the writings about Mexican Americans" (pp. 443–44).

The obsolescence of this study, which was completed in 1968 and published only in 1970, is particularly regrettable in three areas.

The first concerns the virtual omission of indigenous political movements, as noted above. The United Farm Workers and the Alianza would, I should think, fit properly into the primary focus on socioeconomic conditions, even if it might be argued that the Crusade for Justice does not. The omission is deliberate. An introductory note about popular images which the study aims to counteract says that the "exciting events" with which the UFW and the Alianza have been associated "happened to involve fringe problems of the Mexican-American population. . . . The news reports served to reinforce a false national image of Mexican Americans as a rural people with special complaints that are only loosely related to the main problems of our urban society" (p. 6). I am willing to let the Alianza go, for the sake of this argument, as an isolated rural group. But to dismiss wage laborers in national-conglomerate-owned agribusiness as "rural people with special complaints" is to see "factories in the field" as if they were farms. This error also misses the intimate ties between Mexican-American life in Los Angeles, San Francisco, and the central valley of California. And it ignores the role of Cesar Chavez as spiritual symbol and elder statesman of the Chicano movement everywhere. It would be parallel to discussing the poor in India without Gandhi, because Gandhi advocated a return to cottage industry.

The second obsolescence is that the population data, which are so central to much of the factual presentation, are a full census out of date when the book was published.

Third, the bibliography contains no sources past 1968 and very few past 1967. Since publication on Mexican Americans is expanding at a frightening rate, most specialists on this minority will be disappointed to find that what they have anticipated as the definitive work is not very useful as a source for other literature. In passing, let me remark that the bibliography is divided in a fairly standard manner which has always struck me as unnecessarily time consuming to use: books, pamphlets, and government publications; journal articles; unpublished dissertations; other unpublished materials; only the last part (entitled "Bibliographies") is a functionally separate category.

The Study Project should finally be judged against its own aim, "to depict factually and analytically the present realities of life for Mexican Americans in our society" (p. 8). I feel that it succeeds, to a very considerable degree, in presenting pertinent facts, except in areas where Mexican Americans are constructing their own present realities faster than prosaic scholarship is following them. Analysis is seldom attempted by the senior authors but, rather, is left to contributors of specific portions of the project.

Cherokee Tragedy: The Story of the Ridge Family and of the Decimation of a People. By Thurman Wilkins. New York: Macmillan Co., 1970. Pp. x+398. $10.00.

Robert K. Thomas

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Another rich volume has been added to the growing literature on the history of the Cherokee tribe. *Cherokee Tragedy* by Thurman Wilkins is a welcome examination of Cherokee history in the first half of the nineteenth century. The focus of the volume centers around the Ridge family, who were prominent leaders of Cherokee affairs in that period, providing direction for much of Cherokee development in their lifetimes. They are most widely known for their part in the controversy centered around the Cherokee Removal, and several members of the family were assassinated by Cherokees in retaliation for their signing of the Removal Treaty of 1835, a treaty which the majority of the Cherokee tribe and the Cherokee governmental officials felt was illegal.

As a scholar, I am impressed by the wealth of detail in this volume and by the very precise documentation of that detail. The book is a fine example of scholarly craftsmanship. I am further impressed with how the Ridges come alive as human beings in Wilkins's presentation of them One manages to get a rare perspective not usually encountered in historical volumes, a kind of "worm's eye view" of Cherokee history in that period, the world as seen through the eyes and actions of the Ridges Unfortunately, there is a negative side to such a complete immersion into one family's life. It is sometimes difficult for the reader to understand the context in which the drama of the Ridges occurs. I had to turn to other volumes to get a picture of general events in the Cherokee nation during that epoch.

In all honesty, I must say that I found the author a little innocent about the use of source material. Almost all sources seemed to be of equal weight. Little attempt was made to evaluate very emotional and value-laden accounts in such a stormy period of Cherokee history.

I hope that these comments will not be taken as nit-picking, which I abhor. The strength of the book far outweighs its shortcomings. As I have

indicated above, the Ridges come alive as real human beings. As an anthropologist, I find this quality of the book refreshing. One could use this material to make a classic case study of marginality, for instance. As a Cherokee, I was touched by how the family patriarch, Major Ridge, emerged as such a fine gentleman in the Cherokee style. This was my first experience in grasping the quality of the man; his faith in white education was both pathetic and noble; his respect for the guidance of his well-educated and ambitious son and nephew pointed out the timeless dilemma of such simple men as he; and his courage in signing his own death warrant, as he put it, is both admirable and repugnant.

The only real objection I have to Wilkins's portrayal is that the Ridges come off just a little too noble for the times and the situation. Many new emerging nations have the problem of what Westerners refer to as corruption in government. Very marginal and individuated tribal groups like the Ridges are always difficult for their community to control. The Ridges, after all, were the product of a tremendous social upheaval in a tribal group.

It is this last point that I would like to talk about most emphatically in this review. I will first apologize for using Wilkins as a "straw" man, but I'm afraid that there are no Cherokee Indians in his volume. This is reflected in many ways. For one thing, there are voluminous records in the Cherokee language. These records are not utilized by Wilkins. I am afraid that ignoring these sources has, until recently, seemed to me normal historical procedure. However, recently a friend of mine who is a Chinese historian pointed out to me that most historians read the language of the people they are studying. At that point I realized that no western historian of Cherokee history has bothered to learn the Cherokee language. Further, no western historian has bothered to talk to modern Cherokees about an era in which most of our great-grandfathers lived. There are few Cherokees over sixty who could not recount stories told of these times by eye witnesses. Granted, there are dangers in naïvely accepting all oral history, but that sin is much more venial than to ignore such a body of data.

I must say that I never cease to be shocked by the sophistication of most of the authors who write about Cherokee history. Their attitude regarding Cherokee culture seems to be on a par with the local missionary of the time. Let me take an example from Wilkins's volume. In speaking about Cherokee reaction to the visit by the great Shawnee leader Tecumseh he says: "They refused to associate with Tecumseh's coming the great comet that swept slowly across the sky, lighting up the heavens at night, a spectacle which held the backward and more ignorant Creeks in awe and doubtless prepared the way for Seekaboo's secret machinations" (p. 54). I would like to assure my friends among the Creek tribe that this is Wilkins's evaluation of their way of life and not a Cherokee view. These kinds of statements about savages, progress, etc., are replete in this volume and reflect a general attitude, which I can only characterize as naïve racism.

I suppose that I could forgive racism. Sometimes racists are very astute observers of human behavior even though they make distorted and negative interpretations of that behavior. But I cannot forgive the fact that there are simply no Cherokee Indians in the volume except insofar as individuals are measured against a gross yardstick of "progress." Only the recounting of actual behavior and direct quotes saves this volume from a crude ethnocentrism. Fortunately, one can read behind the interpretation and get a notion of Cherokee culture and society as it undergoes a florescence in the early 1800s.

Since I have used Wilkins as my "straw" man, I would like to apologize for overstating the culture boundness of his volume in order to make my case. His work is certainly no worse than most books dealing with Cherokee history and, in fact, better than most. Further, the wealth of detail in this volume and his sympathetic portrayal of the main action on the Cherokee stage make this volume a must for American Indianists and of general value to social scientists as a whole.

Let me end my review by congratulating Wilkins for his contribution to our search to understand the human condition.

Masses in Latin America. Edited by Irving Louis Horowitz. New York: Oxford University Press, 1970. Pp. 608. $13.50 (cloth); $3.95 (paper).

Henry A. Landsberger

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Horowitz and the publisher's blurb introduce this volume with some almost explicit digs at Lipset and Solari's *Elites in Latin America*—to which Horowitz and Oxford University Press (not to mention me) had contributed some years ago, no doubt to the best of our respective abilities. The digs are along the lines of "we are probably more correct and better for not being elitist." The present volume does indeed differ in emphasis from the Lipset and Solari collection, but not nearly as much as the titles would indicate. This is only to be expected, since most analyses of "the masses" must take the elites into account, and vice versa.

Horowitz's book, as he indicates, is a convenient reprinting of some of the essays and reports published separately in the series Studies in Comparative International Development, edited by Horowitz, which in turn are often reprints of material presented or published elsewhere, though often very difficult to get hold of, since they may be papers presented at conferences sponsored by, for example, various United Nations agencies. The quality of these papers is inevitably uneven and the rationale for their being included sometimes not clear. But there is no doubt that much of the material is of high quality. I would not pay $13.50 for the hardcover edition; I would, however, pay $3.95 for the paperback.

The essays fall into three groups, my divisions differing from those of

Horowitz, whose organization I found difficult to discern. The first group deals with the urban population. In this category belongs a highly abstract piece by Touraine and Pécaut on working-class consciousness, in which cross-cutting typologies of causes, effects, and stages are superimposed on one another in ways which, somewhat similar to the writings of Talcott Parsons, are very stimulating but difficult to follow, not too well written and/or translated, and short on illustrative material let alone proof. The notions of withdrawal, defense of status, and development consciousness are fascinating. But I am not sure whether they are, as a sequence, a realistic description of anything. At the opposite end is a less overarchingly ambitious, but very effective, piece by Goldrich, Pratt, and Schuller which, for the first time, compares squatter settlements cross-nationally as well as within-country. It ends with the provocative hypothesis that groups can become depoliticized, even after a positive experience with mobilization. Two further contributions, one by Bryan Roberts (based on a study of the social organization of slum dwellers conducted in Guatemala City with Richard N. Adams) and the other by Andrew Gundar Frank, likewise address themselves to the squatter problem.

A second group of essays focuses on the rural sector. Among these is, first, Stavenhagen's already, and deservedly, well-known conceptualization of Indian populations as sometimes "class," sometimes "colonial"; second, Cotler's parallel analysis of Peru which, predictably, portrays a politically much more fluid situation and examines it at the national as well as local level; and third, Huizer's well-condensed history of peasant organizations in Mexico and their relation to the Partito Revolucionario Institucional. Also into the rural group falls a very wide-ranging analysis of the entire Latin-American agrarian situation (ownership, productivity, types of reform, etc.) by Barraclough and a brief piece by Flores on the financing of expropriations in Mexico.

Finally, there are a group of essays which deal essentially with national social structure, often little related to masses, but not for that reason any less good. Furtado's analysis of how the kind of interaction between commercial and agrarian elites invariably halts national development at some point, regardless of substantial between-country variations and regardless of changes over time, is brilliant. And Germani's historical portrait of mass immigration into Argentina and its cultural effects (and noneffects) is also excellent. Articles by Weffort and by the late Camilo Torres focus on how unsatisfactory elite-mass relationships are, whether by design or because there are dilemmas inherent in the situation. Two final essays, by Victoria and Germani, deal with revolutionary situations in Cuba and Argentina, respectively, again at the level of total social structure. The introductory essay by Horowitz poses very clearly, but very understandably solves less well, the issues of the conceptual definition of "mass"; its relationship to other concepts such as class, elites, and marginality; and the empirical relationships between mass and mobilization, revolutionary consciousness, urbanization, etc. This is a very useful collection.

The Impact of Communication on Rural Development: An Investigati Costa Rica and India. By Prodipto Roy, Frederick B. Waisanen, Everett M. Rogers. Paris: UNESCO, 1969. Pp. xvi+160.

Communication and Social Change in Latin America. By Paul J. Deu mann, Huber Ellingsworth, and John T. McNelly. New York: Fred A. Praeger, Inc., 1968. Pp. xvi+123. $15.00.

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These two books are representative of the "diffusion of innovati paradigm that is especially pervasive in sociological research in dev ing countries. The approach fits nicely into an era of American tech expansionism because it purports to explain how innovations spread the creative center to the potential users at the periphery. The emp on technological innovation, on individual-level processes of accept and adoption, and on the importance of mass media in the total pr are quite congruent with American technologically oriented aid p and with the psychological bias in American sociology. Thus, thes search reports are significant beyond their particular findings.

The Impact of Communication on Rural Development concerns tw periments, in Costa Rica and in India, that deal with the proce communicating knowledge about innovations and, especially, the efficient techniques for accomplishing it. Both designs show the pre posttest treatment versus control pattern that is typical of work in paradigm. The treatments consist of listening to and discussing r broadcasts about agricultural innovations, reading a pamphlet and cussing it, and, for India only, discussing the uses of innovations one of the members of the community who has special training (an tion). The research involved fourteen villages in Costa Rica and eig India, with several hundred respondents in each place. The reports s a high level of research competence, especially in view of an ac volcano in Costa Rica and an unpredictable budget situation in l countries. The reports are clear and concise, and the comparison a summary by Rogers wrap up the two more detailed analyses nicely

What did they learn? In Costa Rica, neither radio forums nor lite classes worked very well, although radio forums were somewhat be In India, the radio forums were clearly superior. In Costa Rica, there not much rub-off on the villagers who did not attend the forum, bu India the "nonparticipants" seemed to learn more than the actual m bers of the various groups. This surprising outcome is explained in te of "ceiling effects"; that is, the somewhat higher-status and more kn edgeable forum participants already knew a lot about agriculture, so less room to change than other people in the village. However, all of t results deal mainly with *knowledge* of agricultural innovations; the ef on favorable evaluation of them and especially adoption was less p nounced.

In addition to the ceiling problem, the authors are aware of the effects of contamination (i.e., information spread) between treatment and control villages, class (literacy groups for literates and neoliterates), and comparability of meaning across cultures. They seem less aware of, or were unable to do anything about, the problem of the quality of the treatments, the self-selection or biased selection of participants for the various treatments, and the location of the villages in the hinterlands of large cities. Would these treatments have had any effect outside these urbanized areas? Roy et al. did attempt to measure and control on the modernization of the villages, but the measure was insensitive in India and nonpredictive in Costa Rica.

The Deutschmann et al. book has three purposes: to describe the perceptions of 309 professionals and technicians from fourteen Latin-American countries with respect to social change; to determine whether exposure to different types of "communication" affected the performance of these potential change agents; and to evaluate the effects of a one-week "communications seminar" that 169 of the members of the sample had participated in. This group was selected from some 3,500 seminar participants who had come to Michigan State University between 1959 and 1961, usually after a period of training somewhere else in the United States. These seminar participants were interviewed in their home countries after they had returned to their jobs, and the control group consisted of 140 "counterparts," colleagues working in the same bureaucracy for the most part. Deutschmann and his associates found that the professional people in the sample did see major changes occurring in their countries—in industry, public administration, agriculture, etc., and less so in the more invisible areas, such as nutrition—and they felt that their own agencies were involved in these changes and that they themselves were contributing. As a group, these middle-level professionals were well read, well traveled, and generally well placed in their governments. As a group, they were "making it" and were inclined to be optimistic about the progress of their countries. Only five respondents mentioned the Soviet Union as a source of influence, and Czechoslovakia and Cuba each received two mentions.

These change agents relied on technical publications and had access to foreign media. Those who had been to the United States for training made somewhat heavier use of the media, especially U.S. media. When media exposure is taken as an independent variable, it showed a significant correlation of .24 with the self-estimated percentage of time spent in introducing change. A somewhat different result was obtained with respect to the number of months of foreign training. The association with self-estimated percentage of time spent in introducing changes was negligible, and the correlation within the participant group (who had all been to the United States, at least) was −.11 as compared with .17 for the counterpart group. Moreover, number of months of foreign training did not correlate with degree of mass media exposure. So the basic hypothesis of the whole study and the justification for concentrating on

this particular group of communicators appear problematic at best. Even with consistent results we can never know whether "time spent in innovation activity" leads to change.

The results of the third area of investigation fare little better despite the authors' firm conclusion that "U.S. training was a significant influence in the direction of involvement in change" (p. 105). Although correlations were found between participation and various self-estimates of change activity or influence, the counterhypotheses are not dealt with. The participants may have been selected from jobs that gave them more opportunity to engage in change activity, the seminar may simply have reinforced their career patterns in this and other respects, the result may hold only at the verbal level and bear little or no relationship to what others might call change, and even if the result does hold, it may still fade quickly.

However, the book is a useful description of a certain type of professional in Latin America, and the chapter on the use of the semantic differential in evaluating attitudes is innovative. The information is broadly and clearly enough presented to suggest a general counterinterpretation along the lines that a subcommunity exists in these Latin-American countries that links middle-level bureaucracy with U.S. influence and that, while no one element of U.S. training makes much difference, the total package constitutes a significant linking structure between the center and periphery of a far-flung technical-bureaucratic culture.

The Machiavellians: A Social Psychological Study of Moral Character and Organizational Milieu. By Stanley S. Guterman. Lincoln: University of Nebraska Press, 1970. Pp. xvii+178. $9.50.

John D. McCarthy

Vanderbilt University

In this study Stanley Guterman has shown us the quality we have come to expect of the University of Nebraska Press. His work is an example of Lazarsfeldian methodology carefully and thoughtfully applied, exhibiting all of the strengths and weaknesses of such an approach. He employs tests of significance as a standard in spite of his recognition that their use is not appropriate to his data. He employs multiple indicators of concepts when possible and a theoretical focus to examine patterns of evidence rather than allowing ad hoc hypotheses to rise or fall upon single zero-order tests. Guterman remains close to his evidence as he leads the reader through the intricacies of his story, carefully avoiding at all times any overstatement of his case. But what of the story?

"Machiavellianism [is] . . . an amoral, manipulative attitude toward other individuals, combined with a cynical view of man's motives and of their character" (p. 3). Using a scale developed by Richard Christie to

measure this concept, Guterman administered questionnaires to 482 white-collar and managerial employees in twenty-six hotels located in the eastern coastal states. Employing Freud's notion of a superego as a theoretical focus, he examines the respondents' relations with parents and school during the adolescent years in order to illuminate the antecedents of Machiavellianism. Using Cooley's "looking-glass self" concept as a theoretical focus, Guterman examines the relationship between Machiavellianism and both sympathy and need for social approval. Finally, Toennies's theoretical discussion of solidarity leads Guterman to investigate the relationship between friendship ties, family ties, size of adolescent community, and size of current community, and Machiavellianism. In general, the data support his hypotheses and hunches. For instance, the better the rapport between parent and respondent, as remembered by the respondent, the less likely he is to be highly Machiavellian. The greater the need for social approval, the less likely is the respondent to be highly Machiavellian. The larger the community in which the respondent was raised, the more likely he is to be highly Machiavellian; and this is especially so for respondents whose family situation fostered Machiavellianism. But what of social milieu?

All of the milieu variables utilized by Guterman are either analytic or structural in Lazarsfeld's terms. He does not employ variables which Lazarsfeld terms "global." For instance, he uses the average score of the employee respondents in each hotel on his measure of solidarity feelings to characterize each employee no matter what his own score. The same is true of the average Machiavellianism score of each hotel and the average Machiavellianism score of management respondents. One of the structural variables employed is hierarchical incongruity—a difference between the average scores of the management and the rank and file on Machiavellianism. In this analysis of the effects of milieu, however, Guterman focuses upon the solidarity feelings of employees rather than Machiavellianism as his dependent variable, for instance: "Three characteristics of hotels—a high level of Machiavellianism, an incongruity between the management and the rank and file in Mach scores, and heterogeneity among rank and file with respect to Mach—are associated with low SF [Solidarity Feelings] scores" (p. 130).

The milieu analysis, according to Guterman, is carried out at two levels. One he terms contextual where analytic and structural properties of hotels are used to account for the behavior of individuals. The other—we might term it ecological, though he does not name it—relates two such properties of collectives. Guterman's presentation is somewhat fuzzy here, as he continually slips back and forth between levels of analysis and at several points implies that the same hypothesis can be tested with both types of relationships. It is not necessarily the case that a relationship between an analytic group variable (x) and an individual variable (y) will be similar to the relationship between the analytic variable (x) and an analytic variable (z) constructed from the same indi-

vidual variable (*y*) if the unit sizes differ (and Guterman's unit sizes do differ). This problem is similar to the ecological fallacy.

Though the Machiavellianism scale has been in use for quite some time, I find its use relatively restricted, judging by the number of publications reporting it. Maybe we should count ourselves the lucky ones. Hopefully, we will not be subjected to a legion of social scientists marching to the promised land with publications on their vitae reporting correlations of Machiavellianism with every other conceivable variable. We might be led to expect such a legion of our fellows based upon their performance with the scales originally reported in T. W. Adorno et al.'s *The Authoritarian Personality* (New York: Harper & Row, 1950). Even if such a barrage is forthcoming, however, Guterman's little study may serve to usefully direct the marchers through his focus upon milieu. Even if Machiavellianism is a relatively stable personality characteristic, and Guterman believes that it is (p. 79), action stemming from the characteristic ought to vary with milieu. That a society is rife with Machiavellians may be little reason for concern if the milieus in which Machiavellians find themselves inhibit action stemming from such a characteristic. The same is true of authoritarians, a point which Adorno and his colleagues overlooked as a result of their heavy emphasis upon personality as a predictor of behavior and which was recognized by some of their critics.

Guterman directs almost no attention to Machiavellian behavior, but his study is suggestive in this respect. He does not ask whether the Machiavellians he studied were more successful in their work than "men of conscience" (his term). We might expect this to be so, since Machiavellians have been shown to be quite successful in manipulating their fellows in laboratory situations. The milieu he studied may reward Machiavellian behavior—another situation where "nice guys finish last." A question which may make this sort of study relevant to the problems of our time and the concerns of Guterman, too, I suspect, is whether Machiavellians are likely to behave nicely in situations where nice guys finish first.

Men in Crisis: A Study of a Mine Disaster. By Rex A. Lucas. New York: Basic Books, 1969. Pp. xiii+335. $10.00.

E. L. Quarantelli

Ohio State University

On October 23, 1958, a sudden underground upheaval in Canada devastated one of the deepest coal mines in the world. Twenty-one miners were trapped underground, fourteen in one location, the other seven in another group elsewhere. This book is a description and analysis of the behavior of the men in these two groups who were rescued more than a week later.

Immediately after their rescue, the miners were intensively studied by an interdisciplinary team of sociologists, psychologists, and psychiatrists.

This team reported their observations in a monograph, *Individual and Group Behavior in a Coal Mine Disaster* (Washington, D.C., 1960). However, as is often true in joint research efforts, one of the sociologists in the team felt that all the sociologically relevant data had not been fully exploited. The consequent result was the book under review.

Chapter 1 describes the cultural and structural aspects of community life in a coal-mining town. The author shows that many of the norms, codes, and institutional arrangements are organized around problems of danger, injury, and death, including the possibilities of highly unpredictable events in the mines themselves. The "disaster subculture" involved is well depicted, although, surprisingly, the author does not use this rather current concept in the disaster literature.

The next chapter describes the initial escape-oriented behavior of the two groups. This narrative is organized in terms of the successive redefinitions of the situation the trapped men applied to their plight. About two-fifths of this long chapter consist of direct quotations from the later interviews with the rescued men. These capture well the progressive risk taking engaged in by the trapped miners. An attempt by the author to quantify initiators of actions during this period of entrapment seems rather forced and unconvincing, dependent as it is on self-reports.

The third chapter analyzes the group discussions that went on as the men realized they could not escape. Their behavior turned toward survival. Particularly in this chapter a reader cannot help but be impressed by the reasonableness, ingenuity, determination, and cooperation of these men in a very desperate situation. While this observation merely confirms what has been consistently observed in disasters, it comes through very forcefully in this account.

The bulk of the book deals with different aspects of the survival period, from the time when escape efforts were abandoned until the men were rescued. There is an extensive discussion about the control of expressive behavior. It is couched in such terms as anticipatory socialization, role expectations, role observability, and role set. In many respects, what the author is saying in a jargonistic fashion is that the men had a conception of the masculine miner's role which was reinforced when they observed it manifested in the behavior of others trapped with them. A particularly good case is made that self-control was maintained because of the observed self-control of others in the situation. In a basic sense, it is social control rather than self-control that is involved in situations of this kind.

The best discussion in the book is the analysis of how the trapped men engaged in behavior which was abhorrent to them, for example, drinking their own urine. How the act became socially permissible is very well depicted. What occurred was that, in the course of verbal interaction, self- and other legitimation for the act slowly developed. In symbolic interaction terms, although they are not used by the author, a new meaning emerged.

On the other hand, there is a disappointing analysis of how the miners

maintained their hope for rescue. No clear picture emerges. There is no real explanation of why optimistic definitions of the future were exchanged.

The book has no useful summary. A reader has to decide for himself important implications and extrapolations to other stress situations. But there is a good and useful discussion of the methodological problems in this kind of research.

There are four questions that bothered me in reading the book. Why is there a denial that this study is in the disaster research tradition? Even the subtitle of the book implicitly makes this claim. Why is the recent disaster literature on panic behavior and related matters ignored? There are only seven references to sources after 1964, and these include two from the author himself. Why is it emphasized that this is a sociological study when almost all the concepts used and even activities examined are generally thought of as being clearly social-psychological? Finally, why give a pseudonym to a town when even in the footnote references allow anyone with access to a library to learn its real name?

However, on balance, the book not only is a worthwhile addition to the disaster literature but is also of value to social psychologists interested in processes and mechanisms of adjustment to stress. Anyone interested in such problems should have this book in his library.

Demography: Principles and Methods. By T. Lynn Smith and Paul E. Zopf, Jr. Philadelphia: F. A. Davis Co., 1970. Pp. xvii+590. $10.00.

Nathan Keyfitz

University of California, Berkeley

Consumer guidelines are needed for textbooks of demography. The expanding supply of such books is brought into existence by a rising demand for knowledge that might enable the nation and the world to cope with its problems of population and environment. Competition among publishers is keen, but this does not always ensure a product of quality.

For textbooks, as for dress shirts or lawn mowers, quality has a number of dimensions. These include judgment in selection of themes; logic and clarity in the sequence of exposition; presentation of theory in relation to data rather than these two in separation; and introduction of such techniques as are needed to process the data and bring them into effective confrontation with theory. A good text should assemble in coherent form the results of relatively recent research. Originality on the part of the author is less of a virtue than a balanced presentation of the discipline as a whole.

I believe that an impartial consumer panel would rate Smith and Zopf below standard quality. It would find that they particularly fail to incorporate research results. Ansley Coale's research on age distribution that

shows that high birth rates rather than high death rates are responsible for a young age distribution; Norman Ryder's analysis of cohort as against period data in his study of birth changes; the demographic transition as studied by Frank Notestein and others; the relation of dependency ratios and age distribution generally to development—none of these central topics is treated in any detail, and some are omitted altogether.

In some instances, gross distinctions are covered over. The geographical center of population is defined as "the point at which all [the inhabitants] could gather with the minimum total amount of direct airline travel" (p. 44). This makes the center of population a function of the airline network; much worse, the discussion here and on page 60 suggests that the writers are unaware of the difference between the center of minimum travel and center of gravity. One can convince himself that these are not the same by considering even the simple case of a country with three inhabitants living on a straight line.

The book is written for the reader who comes to demography with no previous knowledge (though even for such a reader it seems too elementary). He would obtain a peculiar impression of the corpus of knowledge in our field. He would find that most contributions have been made by T. Lynn Smith, with eighty-eight references. The second most important source of knowledge is Paul Zopf, with thirty-seven references. Hawley, Henry, Kirk, Lotka, Notestein, Ogburn, and Ryder, with one reference each, are barely noticed, and Berelson, Potter, Sheps, and Tietze are not mentioned at all.

But perhaps names are unnecessary in a textbook, which after all should synthesize a body of knowledge. The best parts of the present work are those that are descriptive. The mechanisms responsible for the growth and decline of populations deserve more attention in a book on the principles and methods of demography.

Poverty and Health: A Sociological Analysis. Edited by John Kosa, Aaron Antonovsky, and Irving Kenneth Zola. Cambridge, Mass.: Harvard University Press, 1969. Pp. xvi+449. $12.50.

Howard Waitzkin

Harvard University

The senior editor introduces this collection of essays with the rather hackneyed biblical aphorism "The poor always ye have with you." This determinist cast pervades a verbose and largely unoriginal book whose principal usefulness derives from an exhaustive fifty-three-page bibliography.

Although the editors claim to eschew an explicit political position, their politics are clear throughout. Anticipating the reader's surprise at not finding an angrier or more passionate book, they claim that professional-

ism and an enhancement of understanding is "more of a service t ranting" (pp. ix–x). Politics, according to the editors, is "one irrati element that perhaps unavoidably intrudes." Academic research, on other hand, "inhibits impulsive actions" and promotes "rational acti through "systematic knowledge" (pp. 332–33). The editors' political proach is unmistakably conservative. This orientation is understanda in view of the senior editor's previous outspoken criticism of Commu social science in Eastern Europe (*American Sociologist* 3 [May 19 152–53 and 3 [August 1968]: 247).

Perhaps because of underlying political conservatism, the editors satisfied to document in great detail the already well-known associa between poverty and illness in the United States. The health of the p however, is inextricably related to the political system under which poor must live. Certain countries with more socialized governmental tems (examples are the Scandinavian countries, some Canadian pı inces, and Cuba) have acted to reduce or eliminate poverty; in tl countries the health care of the poor has improved enormously. By chc the editors intentionally exclude a comparative international perspec from their analysis (p. x). As a result, they fail to consider the basic po cal changes which almost certainly must precede significantly impro health care for the poor in this country. The volume lacks any analysi the possible benefits to the poor of a socialized health care system. though they offer no evidence, the editors claim that it would be " realistic to demand that private-practice medical care should be m available to all citizens of the country, but it would be even more foo to strike out for abolishing private practice or denying it to those v wish to use it and can pay for it." Instead, the editors hope that privε practice medical care will become more widely available and that existing system of public clinics will be improved (p. 337). To implem this goal, the editors support a system of national health insurar which—as many writers have commented—promises another huge fin cial bonanza for physicians in private practice and no fundamer change in the organization and delivery of medical services in pove areas.

Another disappointing hiatus in this book is its failure to consider stitutional power structures, especially the relationships between la medical institutions and low-income communities. There is great irc in R. H. Ebert's foreword to the volume. Ebert, dean of the Harvε Medical School, states: "The evidence is overwhelming that just as t poor are deprived politically, educationally, and environmentally so a they deprived medically. . . . They are relatively powerless in the me cal care system" (pp. v–vi). In a later exhaustive paper on social diff ences in mental health, Marc Fried hypothesizes that the feeling powerlessness—"the expectation that one has no control over his o destiny"—may comprise a primary determinant of psychiatric disord among the poor (p. 153). Despite much publicly expressed concern abc

the powerlessness of the poor, such urban institutions as the Harvard Medical School have shown little interest in the preferences or feelings of poor people in immediately surrounding communities. The Harvard Medical School, for example, has attempted to destroy low-income housing and to displace residents of an entire community in order to build a complex of highly specialized research-oriented hospitals, even though alternative sites of empty land were available (see my article "Expansion of Medical Institutions into Urban Residential Areas," *New England Journal of Medicine* 282 [April 30, 1970]: 1003–7). The power position of large medical institutions, as well as the almost complete lack of influence which low-income individuals can exert over the type or quality of services they obtain from these institutions, apparently is not a topic of interest for the editors or authors of this book.

An even more surprising omission is the issue of community control. Throughout the United States, members of low-income communities have begun to attain control over the health services they receive in their neighborhoods. The Black Panthers, the Young Lords, and other organizations have established clinics in several cities which attempt to provide free primary medical care. In contradistinction to the public clinics of urban hospitals, these community-controlled free clinics offer services in the evening and on weekends—often the only times when low-income people can conveniently seek medical attention. As an extension of community control in health, low-income activists in New York have demanded control over a segment of the services provided by a large medical institution, Lincoln Hospital. Increasingly, members of low-income communities are coming to believe that, for effective medical care, the people themselves must be able to determine the services they receive and the personnel who serve them. The issue of community control in health and the development of the free-clinic movement, however, are beyond the purview of the present volume.

Several contributions to the book are noteworthy. In a discussion of social differences in physical health, Monroe Lerner postulates a U-shaped relationship between morbidity and social class—highest morbidity in the poorest and the wealthiest strata—but, unfortunately, supplies little data to verify the association. Fried's account of social differences in mental health provides an exhaustive substantive review and methodologic critique of the extensive previous literature in this field. Julius Roth offers a trenchant descriptive account of treatment of the poor in emergency clinics, inpatient wards, and chronic-disease facilities. Although Arthur Shostak develops a convincing paradigm for successful programmatic intervention in the relief of problems associated with poverty, he does not specifically apply the paradigm to health-care programs. Finally, John Stoeckle provides a valuable historical and critical review of urban and rural health centers, together with comments on their future potential.

Contributions by other authors offer little that is new or illuminating.

Much of the book is composed of naïve and unsubstantiated speculation, such as the following assertions by the senior editor (in a chapter entitled "The Nature of Poverty"):

> In an almost cathartic outburst of emotions [in the 1960s] the nation suddenly realized that large-scale, unattended poverty existed in the most affluent country of the world and set out with earnest dedication to resolve this "paradox." [P. 12]
>
> As for family structure, the nuclear family, with a planned number of children, is the ideal acquisitive unit since it implies the optimal state of having a male breadwinner and an optimal ratio of breadwinner and dependents. [P. 19]
>
> On the other hand, some of the social factors are resistant to any action program; old age and the female sex will always constitute deprived categories in acquisitive competition, and no change can be expected in such hard facts of life. [P. 32]
>
> With the arrival of Marx, poverty became the central issue in European politics and social philosophy. [P. 11]

One should expect more from medical sociology.

Adjustment to Retirement: A Cross-national Study. Edited by R. J. Havighurst, J. M. A. Munnichs, B. Neugarten, and H. Thomae. New York: Humanities Press, 1969. Pp. xii+195. $6.25 (paper).

Harris T. Schrank

Equitable Life Assurance Society

Matilda White Riley

Rutgers University

Extensive discussion of methodological issues is particularly appropriate in cross-national or comparative research, especially when an unusual effort has been made to achieve cross-national comparability. Much of this volume consists of such discussion, putting into perspective the data presented on adjustment to retirement among workers in several countries. Hence, this is a thoroughly self-conscious and self-critical book—conscious of the limitations of reliability and validity inherent in cross-national data and critical of almost every attempt the authors make to overcome those limitations.

The essays and working papers reported in this volume pursue, according to the authors, a line of inquiry designed to support either of two theories of aging: the "disengagement" theory or the "increased option" theory. The controversy surrounding these alternative theories provides the intellectual context for the work the authors have done to this point. But they ask us not to judge too harshly if they fail to help us assess the usefulness of either theory, for this is only a "pilot study" designed to "generate hypotheses" and to "explore a method and research design"

(p. 4). The authors not only limit their objectives, but whatever remains they also criticize mercilessly. The reviewers are left, then, merely to summarize, comment, and despair that this project, involving so much effort and so many talented people, concludes with results that are at best inspirational or suggestive.

In an ingenious sample design, retired steelworkers and teachers in six cities (Chicago, Vienna, Milan, Bonn, Warsaw, and Nijmegen [Holland]) were interviewed in order to determine their patterns of social interaction, their involvement and satisfastion with various roles, and their perceptions of the changes in these patterns after age sixty. Open-ended questions were asked, and a complex set of rating scales was then imposed upon the answers. Because of the small samples of workers per country (usually twenty-five steelworkers and twenty-five teachers), "conclusions regarding cross-national differences cannot be safely drawn" (p. 13). Moreover, chapter 2, devoted to an explication of both intra- and international "reliability" problems, persuades us of the difficulties of obtaining cross-national and cross-lingual agreement among judges rating the same materials—though some agreement is found. (A fascinating peripheral finding points to the dependence of ratings upon national differences among rating teams.)

Since "present level of role activity" seemed comparatively reliable as a base for cross-national comparisons, special attention is paid to this variable throughout the volume. In a chapter exclusively devoted to the topic (using the analysis-of-variance technique), several statistically significant differences among nations are reported, and for certain roles the interaction effect of nation and occupation is significant. Of course, this analysis is offered "primarily as a demonstration of a method that is likely to be fruitful in future cross-national studies" (p. 38). After all, the statistical refinements are scarcely congruent with the crudity of the measuring devices. And the great variations in the social and economic environments of the samples (the special provisions for retirement housing in Milan, for example, or the unique job market for older teachers in Chicago) leave us uncertain as to how or which "national" factors account for differences in role activity. But again, one should not carp at a shortcoming of which the authors (most explicitly, H. Thomae in a critical last chapter) are completely aware.

The several chapters reporting results, each with its own analytical model, vary widely in scope and in interpretative sophistication. The short chapter on Warsaw is largely anecdotal. The Holland team, using a younger control group as well as an older group, is particularly interesting insofar as they note the importance of differentiating between aging and generational effects. The chapter on Milan explores unique aspects of the Italian context in describing the role of the educator in the Italian family, the possible impact of the Fascist period, and Italian mores affecting association membership. The German researchers examine intranational variations in retirement attitudes, but their report seems to have little direct relationship to the project as a whole.

These "data presentation" chapters are filled with speculations as to the factors, largely occupational, shaping the life-style of each type of retired worker. In Chicago, the "fact" that teachers exhibit "a high level of activity as well as autonomy, initiative, and life satisfaction" (p. 67) during the retirement period is attributed largely to their being teachers. The Milanese teachers are "more individualistic and broader in their varied interests, so that they have less common ground than the steelworker to serve as a basis for social interaction" (p. 78). Perhaps. But the similarly individualistic Chicago teacher is reportedly more active than his steelworker counterpart in the "informal social relations" area. Conversely, "the lesser engagement of the steelmakers in 'creative' activities, and their lesser patience and tolerance of solitude than the teachers have, makes workers more open to social interaction" (in Milan, p. 78). But "after retirement, the [steelworker's] lack of disposition to initiate activity and, in many individuals, the profound need for external structuring of activity, probably led to further constrictions and passivity in spheres such as the friend role and in non-family centered leisure pursuits" (in Chicago, p. 68). All in the cause of "generating hypotheses," one must suppose.

This leads us (and the authors) to the truism that retirement must be studied as another phase of the life cycle, influenced at least as much by prior career and life-style as by the contemporary situational context. Given this approach, the introduction of cross-national cultural and economic experience adds to the range of variables for building a theory of adjustment to retirement. Even this volume, with all its inadequacies, thoroughly documents the limits of the "disengagement" approach for those who are still concerned about this controversial theory. And, as a by-product, the enterprise affords a useful laboratory for practice in international data gathering and analysis.

Interns: From Students to Physicians. By Emily Mumford. Cambridge, Mass.: Harvard University Press, Commonwealth Fund Book, 1970. Pp. ix+298. $8.50.

Elvi Whittaker

University of California, Berkeley

Earliest among the sources that gave substance to this study was a nationwide survey of interns and residents conducted in 1958 by the Bureau of Applied Social Research at Columbia. Subsequently, the author did fieldwork in both a university and a community hospital; she made briefer observations on two consecutive years at the time of beginning internship; she interviewed both physicians and medical professors; and, while working as a medical sociologist during a period of ten years, she observed and interviewed numerous health workers in some sixteen hos-

pitals. Finally, in 1968 she again did research in five hospitals, particularly at the time one group of interns left and another entered. Such apparent breadth in data collecting leads one to expect much.

The major theme in the analysis that Emily Mumford offers is one of socialization during the internship phase. Across this time, the student presumably is converted into the full professional. She indicates how differing institutional climates, value emphases, and perspectives on patients, as well as varying social arrangements within the institution and outside it, mold professional interests and future careers. In short, those medical students who find their way to university-affiliated hospitals are shaped and directed by a milieu which defines situations in terms of their learning and teaching potential, and accords prestige to performances which indicate diagnostic and abstracting proficiency. Meanwhile, the community hospital fosters greater informality and self-sufficiency, stresses interactional skills with patients, nurses, and attending physicians, and suggests a lively involvement with medical networks in the community.

The author seems to have ignored some sociological conventions, in particular the one calling for a background chapter in which the nature and attributes of the group under study are made clear. The omission of pages devoted to age, sex, class, and religious distribution, sometimes completely irrelevant in light of the ensuing argument, might be a blessing. Yet when socialization, a process, a continuum, is at issue, the omission is more troublesome. The intern of whom the author writes is a peculiarly ahistorical figure. Except for a slight passing reference to choice of hospital, medical-school status, academic achievement, and parental education—in the most general terms (pp. 78–79)—it is not at all clear who the interns are and how they got there. By what processes had students come to define themselves as suited to one hospital or another? Which students found their way to which hospitals? How were choices and disappointments rationalized? In order to appreciate socialization during internship and the resulting divergent career trajectories as a continuum, it seems of no small significance to be able to recognize and understand the individual who comes into the institution. One might also ask about the "foreign-born," whom the author carefully differentiates from the native-born for reasons that were not clear to me. Did their socialization eventuate in a different outcome? What of female interns, whom the author did not differentiate? Are their career trajectories to be envisioned as the same as those of their male counterparts?

Much of the argument and generalization lacks a sharpness and a poignancy, and the reader familiar with hospital routine and medical professionals might at times wonder what is new in this book. The weakness in this respect may arise from the author's tendency to be niggardly in providing pertinent quotations from her interviews or from the field. Indeed, the book is at its best, the sense of the socializing process most acute, when we are afforded the occasional glimpse of individuals and their perspectives. On the other hand, the nature of the data itself may

be at fault. One labors against the sense that the researcher has been fed the official party line, that only the outer layer has been revealed. This does not necessarily call for a Goffmanesque revelation of the backstage of the intern's life. Rather, the author could have explored what she, in several places, refers to as the "emotionally charged" environment. For example, instead of peripheral references to the strains inherent in situations where nurses instruct new interns, interview material exploring interns' feelings and experiences could have been used (p. 129). At times, the extensiveness of data might have been complemented with greater intensity.

Happily, this review can be balanced with a much more positive tone. While those wishing for great advances in socialization theory may well be disappointed, and medical sociologists may find parts lacking in novelty, the book could serve as a worthwhile overview of selected hospital routines for the uninitiated. Further to her credit, Emily Mumford has provided an insightful analysis of norms governing the performance of interns in the university hospital, namely, those of the open mind, of relay learning, and of graduated specialization. She has written a convincing chapter on the medical chart as a means of articulating values and socializing the intern and as preserving not only individual successes but also individual failures. Also, she seems to have a good grasp of relevant literature, although one feels she is tempted to write another book through the footnotes. Finally, the book is at its best when it offers situational evidence—backed up by data—of the effects of value configurations on individual performance, or when it suggests how individual actions confirm the institutional structure.

Paying the Doctor: Systems of Remuneration and Their Effects. By William A. Glaser. Baltimore: Johns Hopkins Press, 1970. Pp. x+323. $10.00.

Social Settings and Medical Organization: A Cross-national Study of the Hospital. By William A. Glaser. New York: Atherton Press, 1970. Pp. xi+210. $6.95.

Ronald Andersen

University of Chicago

The author gathered data for these books concurrently by visiting sixteen countries in Western Europe, the Middle East, and the Soviet bloc. He conducted interviews about medical care organization, primarily in 1961 and 1962; examined organizational files; and reviewed the pertinent literature. It is a challenging assignment to summarize and compare the development and effects of important features of health service organizations in as few as two or three countries. Consequently, one must be skeptical of a design that includes sixteen countries. However, I think that the author has described succinctly the various systems and their development.

The fundamental question asked in *Paying the Doctor* is, If doctors are paid by one or another method, what is the difference in how the public is treated? The basic payment systems examined are fee-for-service, salary, and capitation. Means of organizing the various payment systems and the resulting effects on the work and status of physicians are discussed. An attempt also is made to summarize the political circumstances that led to these systems. Some of Glaser's generalizations might be disputed by those with special knowledge of particular countries or methods of payment. Still, many primary sources are documented, and most of the conclusions seem plausible and reasonable and, at least, should be considered important hypotheses.

Some of Glaser's interesting conclusions in *Paying the Doctor* concern (1) the apparent ability of the medical profession to obstruct any unacceptable legislation in a democratic system; (2) the comparatively high salaries of physicians, regardless of the system; (3) the uniform difficulty in attracting physicians to rural areas, which leads Glaser to suggest "that there is no substitute for urban practice"; and (4) the conviction that physicians, according to their own pronouncements, think they make less than they actually do relative to other occupations and professions, suggesting that more publicity on relative salaries might moderate physician demands.

Although Glaser has been largely successful in describing the payment systems and relating them to the physician's practice, his success in determining effects on the public is more problematic. To deal with this question effectively, population data on mortality, morbidity, medical care utilization, and sociodemographic characteristics must be correlated with characteristics of the payment systems. Glaser does allude to population characteristics such as disability days and length of hospital stay from time to time, but the emphasis is on structural characteristics of the system and on the views of administrators, practitioners, and researchers in the countries he visited.

The second book, *Social Settings and Medical Organization*, is the more theoretically oriented of the two. It is presented as an exploratory effort in organizational sociology concerned with how different social settings produce different organizational forms. More specifically, it focuses on the relationships between the hospital and the religious, family, and economic institutions. Separate chapters describe some effects upon the hospital of cross-national variations in each institutional sector. Each of these chapters concludes with a list of tentative propositions about nonmedical social structures and hospital structures that seem, to the author, to be supported by the evidence available.

Some of these propositions might have been more fully developed if the author's primary purpose was to contribute to the systematic development of organizational sociology. However, the work is buttressed by a most helpful set of references and many valuable insights. I found the chapter dealing with "Economics and Urbanism" particularly appealing because of its incisive treatment of the problems of the modern hospital in developing countries. In the final summary chapter, Glaser tussles

with the question of whether his cross-national comparisons can be used to predict social change within countries. He concludes that such an approach may be less fruitful for hospitals than for organizations such as factories, where the greater constraints of technology have a more homogenizing effect. I suspect that some other students of hospital organization might give greater weight to the effect of modern medical technology on hospital organization than is inferred by Glaser (p. 190).

Both of these books have been released at an opportune time for U.S. readers, because of the growing debate about the "crisis" and the "need for change" in the U.S. health service system. Administrators, policy makers, and researchers can all profit from the experiences in other countries aptly summarized in these volumes.

Fifty Years of the Tavistock Clinic. By H. V. Dicks. London: Routledge & Kegan Paul, 1970. Pp. xiv+415. $10.08.

Emanuel Berman

Michigan State University

Official histories arouse justified suspicions. This book is an official history, and the reader is reminded of this whenever he is confronted, within the text, by a long list of names of vice-presidents of the council, staff members at a certain date, or speakers in some ceremony thirty years ago. Nevertheless, the book is an important contribution to the history of modern psychiatry, and when you learn what pages to skip, it makes good reading as well.

This is a history of a fifty-year war. It started in 1920 when Hugh Crichton-Miller, with some other young psychiatrists, established the psychoanalytically oriented Tavistock Clinic as an outpatient clinic for neurotic clients unable to afford private fees. Orthodox psychiatrists, working in mental hospitals and faithful to physiological doctrines and organic methods of treatment, reacted with mistrust, sometimes even with contempt. Orthodox psychoanalysts were suspicious, too. The approach of the Tavistock seemed too diluted, its whole conception of psychotherapy not intensive enough.

The latter conflict belongs to the past; during the years following World War II, the Tavistock and the British psychoanalytic movement were reconciled. The Tavistock still exists, and has clear practical consequences. In 1970, in spite of the fame it acquired throughout the world, the Tavistock is still not recognized as an academic institution; hundreds of mental health workers have been trained by the clinic but have received no degrees.

Dicks, who for many years was one of the central figures of the Tavistock, clearly blames the nonpsychoanalytic psychiatric establishment for this state of affairs. He names two persons in particular, both affiliated with the Maudsley Hospital in London, Hans J. Eysenck and the

late Edward Mapotler. "Whatever may be the historical evaluation of Professor Eysenck's own work in behavioural psychology and Pavlovian methods, his sustained polemics under the umbrella of the Maudsley against the lack of scientific validity of psychoanalytic psychotherapy had, one may be sure, a fairly serious result on the standing of the Tavistock's work" (p. 250).

This controversy is far from being exclusively British. The war between psychodynamic and behavioral-somatic approaches is waged in the United States—in the National Institute for Mental Health (the selective appropriation of research funds is directly influenced by it), in the universities, in public opinion. This book, openly partisan, may be seen as an aid from overseas to the psychodynamic wing.

In addition to being psychodynamic, the Tavistock has always been sociologically oriented. It contributed much to the development of "social psychiatry," a trend which gained great influence in this country. Dicks emphasizes, however, that community mental health never meant for the Tavistock a renunciation of psychotherapy. Treatment of the suffering individual was supplemented by efforts to educate and aid the community, but never replaced by them. This is not always the case with the American exponents of mental hygiene.

Another issue which may be relevant for the American reader is the consequences for the Tavistock of its incorporation, in 1948, within the National Health Service then established by the British government. In spite of several conflicts (usually budgetary) described by Dicks, his overall evaluation of this change is positive. The problems of research not directly related to the service function of the clinic were solved by a legal separation between the clinic and the Tavistock Institute of Human Relations, now organized as an independent private corporation. (The history of the latter body is outlined but not analyzed in the present book.)

The specific details are not always as stimulating as the general issues. This book, by its nature, cannot do justice to the wealth of scientific developments occurring in the Tavistock. The unavoidable theoretical superficiality is sometimes frustrating. One case is the laconic discussion of the years spent in the Tavistock by Ronald Laing, the renowned existential psychiatrist.

The book is written in open identification and pride. Nevertheless, it deals frankly with delicate areas, such as the circumstances leading to the retirement of the clinic's founder, H. Crichton-Miller (in 1933), and of his successor, J. R. Rees (in 1947). In some other problems, however, the limited perspective prevents a critical evaluation. The process of bureaucratization of the Tavistock is acknowledged, but is accepted as self-evident. The parallel process, in which a clinic established to serve those who could not afford private fees became a middle-class agency, is indirectly explained by hinting at the lower intelligence of manual workers (p. 71). This dubious assertion serves to prevent a serious social analysis of this process, which characterizes many other mental health agencies.

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